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Cost-Effective Environmental Management Case Studies

REPORT

This report has not been reviewed for approval by the U.S. Environmental Protection Agency; and hence, the views and opinions expressed in the report do not necessarily represent those of the Agency or any other agencies in the Federal Government.

January 1998

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ENVIRONMENTAL FINANCIAL ADVISORY BOARD

JAN 12 1998

Honorable Carol M. Browner
Administrator
U.S. Environmental Protection Agency
401 M Street, SW
Washington, D.C. 20460

Dear Ms. Browner:

We are very pleased to transmit to you the latest report of your Environmental Financial Advisory Board (Board), *Cost-Effective Environmental Management Case Studies*. This report presents a group of ten case studies showcasing cutting edge, real-world examples of how communities have successfully implemented public-private partnerships and internal optimization (improvement) models. These case studies provide important information on benefits and drawbacks, lessons learned, and how other communities might benefit from the experiences.

While it makes no formal recommendations, the report characterizes some of the most exciting approaches communities are taking to address the financing challenges they face in providing environmental services. It focuses on financing approaches that not only reduce the costs of delivering environmental services, but also improve the delivery of those services. We hope the report will be the first in a series examining successful partnership, competitivization, and internal optimization models. We strongly believe that communities nationwide can use this type of information to help them better meet their environmental responsibilities.

We want to take this opportunity to thank the members of the Board's Cost-Effective Environmental Management Workgroup and its chair, George Raftelis, for their efforts in developing this report. Finally, on behalf of the entire Board, we would like to express to you our deepest appreciation for the opportunity to continue to assist EPA in addressing the financing issues critical to meeting the nation's environmental mandates.

Sincerely,

Robert O. Lenna, Chair
U.S. EPA Environmental
Financial Advisory Board

John C. Wise, Executive Director
U.S. EPA Environmental
Financial Advisory Board

cc: Fred Hansen (1102)
Sallyanne Harper (2710)

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FORWARD

Since its inception in 1989, the Environmental Financial Advisory Board (EFAB) has advised the U.S. Environmental Protection Agency (EPA) on a wide range of environmental financing issues to assist EPA in carrying out its environmental mandates. In this effort, EFAB has worked closely with Agency programs in seeking approaches that lower environmental costs, increase public and private investment in environmental facilities and services, and build state and local capacities to carry out environmental programs and activities.

One area in which EFAB has placed particular emphasis has been the effective delivery of environmental services. In developing its 1997 Strategic Action Agenda, the Board formed a Cost-Effective Environmental Management Workgroup to examine financing models that communities can use to improve environmental services. In its deliberations, EFAB determined that it would produce two products:

- " Case Studies" showcasing cutting edge examples of how communities have implemented successful public-private partnerships and internal optimization models. These case studies would include a discussion of the lessons learned from these case studies and how this information might be used in helping other communities design their own approaches.

- A "How To Handbook" providing guidance to local officials and managers when evaluating the feasibility of various public-private partnership arrangements and internal models. The handbook would also discuss ways various models might be implemented.

This EFAB report delivers on the first of these two planned products. It identifies and presents real-world models that communities are actually using to deliver more cost-effective environmental operations and services. In some cases the models are public-private partnerships, while in others, communities are looking internally to optimization, competitivization, or other re-engineering approaches.

The introductory materials and case studies on the following pages attempt to capture the essence of what EFAB hopes will be the first in a series of exciting partnership, competitivization, and internal optimization case studies. The case studies can provide concrete examples to all local officials how successful partnerships and other models can be used by communities to meet their environmental service needs more efficiently. They also demonstrate how public-private partnerships can be used as one way to provide substantial benefits to both the public and private sectors, creating the classic "win-win" situation.

CHAPTER I: INTRODUCTION

EFAB Description

The Environmental Financial Advisory Board (EFAB), a federal chartered advisory committee which operates in accordance with the provisions of the Federal Advisory Committee Act, was established in August 1989 to advise the U.S. Environmental Protection Agency (EPA) on environmental finance issues to assist EPA in carrying out its environmental mandates. EFAB consists of independent experts drawn from: all levels of government, including elected officials; the finance, banking, and legal communities; business and industry; and national organizations.

Since its inception, EFAB has examined numerous policy and program options across a broad spectrum -- incentives and revenues; environmental costing; institutional efficiencies; outreach and coordination; and rural, urban, and international issues -- that seek to lower costs of environmental protection, increase public and private investment in facilities and services, and build state and local financial capacity to carry out environmental programs. It has worked closely with various Agency programs to better address difficult environmental finance problems, including: the Office of Solid Waste and Emergency Response (Brownfields and Superfund); the Office of International Activities (international/NAFTA issues); the Office of Water (Safe Drinking Water Act guidance); the Office of Air and Radiation and the Clean Air Act Advisory Committee (Clean Air Act issues); the Science Advisory Board (environmental risk and finance); and the Common Sense Initiative (small business access to capital).

EFAB also works in partnership with EPA's Environmental Finance Centers (EFCs), a network of six university-based regional programs that develop and provide financial training and educational and analytical services to states, localities, and small businesses. EFAB members serve as advisors to the EFCs and participate on expert finance panels of the EFCs designed to help governments and small businesses.

Relationship of this Document to Previous EFAB Reports and Activities

EFAB has been a strong advocate of promoting the effective delivery of environmental services. When EFAB was established in 1989, workgroups were formed to examine specific finance areas, including private participation in the provision of environmental services. EFAB's Private Sector Incentives workgroup sought ways private participation could increase resources available for environmental investment by reducing the costs of construction and operations.

In November 1991, the Board released its report, "Private Sector Participation in the Provision of Environmental Services: Barriers and Incentives." The Board concluded that the development of public-private partnerships was inhibited by a number of factors that limit the operational flexibility of public environmental facilities or that reduce incentives for private partners. EFAB outlined strategies designed to increase private sector involvement in service delivery, including: develop federal policies and programs to encourage the establishment of public-private partnerships for environmental services; evaluate the public policy implications of increasing flexibility in applying federal grant policies and regulations to stimulate private investment; encourage states and localities to modify laws that act as disincentives to private investment or operation of facilities; promote strategies that encourage communities to develop user-fee systems that cover the full cost of providing services; and reduce risks associated with private investment or operation of public facilities.

The Board has continued to place a major emphasis on the effective delivery of environmental services. When EFAB met in August 1996 for the purpose of developing its 1997 Strategic Action Agenda, it formed several workgroups, one being the Cost-Effective Environmental Management workgroup. The workgroup expanded its scope beyond just considering public-private partnerships as desirable cost-effective models. Specifically, the workgroup added to its evaluation, models that focus on internally optimizing environmental services. To achieve its objectives, this workgroup outlined two major work products: a compendium of case studies on effective service delivery, and a "how-to" handbook for local officials interested in looking at next steps in terms of pursuing implementation. The result of the first work product (the compendium) is the EFAB report now being released, "Cost-Effective Environmental Management Case Studies" (July 1997).

Introduction to Cost-Effective Management Models

Communities with governmental utilities can consider both an internal and external focus in pursuing more cost-effective environmental service. Focused internally, government utilities first evaluate those areas where there are opportunities for improvement, and then determine their ability to address these opportunities. Externally, government utilities have looked to private sector models to achieve more cost-effective management.

Internal improvement has been defined in recent times by many terms such as "optimization," "competitivization,"and "re-engineering." The process of internal improvement begins with identifying those areas where improvement can take place. Opportunities for improvement can be in the technical, financial, and organizational areas. Examples of areas for improvement are summarized in the following table.

Opportunities for Improvement

Technical	Financial	Organizational
Process Improvements	Utility Rate Schedules (power,	Organizational Structure
Automation	gas, sewer, telephone, etc.)	Staffing
Maintenance Systems	Bulk Purchasing/Procurement	Staff Productivity
Excess Capacity	Inventory Control	Union Agreements
Technology Applications	Improved Cost Accounting	Training
Compliance Risks	and Management Reporting	Shift & Operating Schedules
Energy Conservation	Capital Investments	Overtime
Management Systems		Management Practices

After opportunities for improvement are identified, the government utility must then evaluate its ability to implement the changes necessary to achieve potential improvements. Factors influencing the community's ability to execute change include:

- Supportive management by governing body (political leadership);
- Perception of utility by public/customers;
- Perception of utility by private sector providers;
- Relationship of utility with regulatory agencies;
- Relationship between management and unions;
- Management and supervisory leadership; and
- Employee attitudes.

Should the community lack the wherewithal or the ability to implement change, private sector cost-effective models should be considered.

As a result, elected officials throughout the country are looking to public-private partnerships as they strive to provide environmental infrastructure and services to communities. The options available to them are as broad as their needs. The power of public-private partnerships is the flexibility to match the particular capabilities of a private partner to the unique needs of a community.

Should a community select a private sector management model, it should establish clearly defined and achievable objectives to determine the type of partnership that best meets its needs. This nexus of objectives and needs can include the following:

- capital improvements for upgrades, expansions, or renovations;
- access to private capital;

- access to advanced technology;
- construction or implementation time constraints;
- increased efficiency or dependability of operations; and
- stability of user rate charges.

Community leaders must consider their needs and objectives with a thorough understanding of the legal, technical, financial, and political framework within which they will make decisions. This complexity leads to the uniqueness of each partnership. Fortunately, the range of public-private alternatives available also is very broad. In addition, after evaluating their circumstances, some communities choose to seek internal optimization or reengineering of their environmental services to meet their objectives rather than pursuing a partnership.

Environmental public-private partnerships generally involve a contractual relationship between a public authority and a private company to mutually provide a service or facility. Partnerships can involve a variety of activities and degrees of private participation ranging from design, construction, operation, maintenance, management, financing, and/or ownership.

The following overview presents the principal types of public-private partnerships created by communities for environmental services. It does not discuss in great detail the advantages and disadvantages, relative strengths and weaknesses, and benefits and burdens of each. For this information, the EPA publication, *"A Guidebook of Financial Tools,"* by the Environmental Financial Advisory Board and the Environmental Finance Center Network provides a comprehensive review of many specific types of public-private partnerships.

Most public-private partnerships fit into one of several categories. They are listed below in order of the degree of private participation, from the most private participation to the least.

- merchant facility;
- full privatization;
- concession;
- leasing;
- design-build-operate;
- contract operations, maintenance, and management; and
- contract services.

Merchant Facility

A merchant facility is unique among partnerships because the private sector makes a business decision to provide the service or facility to a community's residents. In other forms of partnerships, the public authority determines the need for the service or facility and then works with

the private sector to provide it. In this case, once the company decides to provide the service, it builds, owns, and operates the system and takes full responsibility for the service and risk for its performance.

This type of partnership is more common for solid waste facilities than for water and wastewater services. The capital costs and regulatory issues related to building distribution or collection systems for water services usually make it infeasible for a company to develop a merchant water supply or wastewater treatment system. Waste disposal sites, recycling facilities, incinerators, and other solid waste infrastructure are not constrained by in-the-ground pipes for their source material and have greater freedom to attract inflows on a business basis.

Full Privatization

The term "privatization" is commonly used interchangeably with "public-private partnership." However, true privatization is a particular form of partnership in which the private sector assumes a great deal of responsibility for the service under the general direction of the public entity. For new facilities, once government officials decide to undertake a project, they would retain the private partner to design, finance, build, own, operate, and maintain the infrastructure and administration necessary to provide the service. For existing facilities, the company typically would acquire, through purchase, the municipal assets and affiliated programs. It then would assume full responsibility for future capital improvements.

Although the private sector owns the facilities under full privatization, the public sector remains an important partner. The two parties typically enter into a long-term contract of 20-30 years that defines roles and responsibilities of each. The municipality often retains the role of setting rates and collecting user charges. It then pays the company a fee for providing the service to the community. Because environmental infrastructure is closely related to land use and planning, local officials often wish to retain some degree of control over system expansion. The private provider, however, is responsible for financing, building, and operating and any capital improvements during the contract period.

Concession

Under concession arrangements, a company typically pays a "concession fee" to a public authority for the "right" to provide an environmental service to the residents of a specific area. This is very similar to the public sector granting a "franchise" to a company. Concessions generally are granted for a term of at least 15 years. The municipality sets overall performance criteria that the private provider must meet, but the concessionaire has extensive responsibility and control over the operations and management of its facilities.

Concessions can involve existing systems or the construction of new facilities. The public authority often retains ownership of any assets necessary to provide the service and is responsible for financing major capital improvements or new facilities. However, the concessionaire may be required to lease the assets from the public sector. In addition, it is responsible for investments necessary to maintain the system. While the public sector, through the local government or an oversight regulatory agency such as a public utility commission, usually has authority to set user rates, the private concessionaire often bills users and collects revenues.

Leasing

The distinction between concession and leasing can be difficult to make. As noted above, a concession grants a *right* to a company to provide an environmental service. Leasing entails more direct public participation. A public authority essentially *hires* a company to provide the service; the company in turn leases from the government the assets necessary to provide the service. The company makes annual lease payments or an up-front "lump-sum" payment to the public partner -- the lessee. The term of the lease can be of any duration, but typically is longer than many operations contracts (see below). The public and private partners establish a service contract concurrent with the lease. The contract sets responsibilities and performance criteria for both sides. The municipality sets and collects user charges and pays a service fee to the private lessor.

The decision to upgrade or expand facilities remains with the public sector, which may design, finance, and build the capital improvements itself or incorporate them into the lease, making the company responsible for providing them based on procurement criteria and performance standards.

Design-Build-Operate

Design-build-operate (DBO) also is known as "turnkey" procurement. Its key element is that one private entity is responsible for designing and building as well as operating and maintaining a facility. The objective is to coordinate all these steps to create innovations, synergies, and efficiencies and to establish firm overall responsibility for performance. This approach obviously works only for new facilities or those needing extensive renovation or reconstruction.

The public sector finances DBO projects, owns the facilities, and generally retains responsibility for capital expenditures during the term of the contract, which can run from 5 to 20 years. The public entity pays the company for design and construction and then an annual service fee. The essence of this arrangement is that the public owner assumes financial responsibility and risk and its private partner assumes technological and performance risk.

DBO has evolved into many self-explanatory variations. Some of the most common include BOT (build-own-transfer), BOO (build-own-operate), and BOOT (build-own-operate-transfer).

Contract Operations, Maintenance, and Management

Under this common arrangement the public sector contracts with a private firm to operate a public facility such as a wastewater treatment plant or to provide a service such as trash collection. The physical assets remain in public ownership and control and the municipality retains responsibility for financing and constructing improvements. However, with the trend toward longer term contracts, from the current 3-5 years to up to 15-25 years, the private sector is increasingly taking responsibility for some capital improvements.

Local officials normally set rates, collect fees, and pay the private operator a service fee based upon usage. The operator, in return, has to meet specified service and performance criteria. As part of comprehensive contract management of a system, the private firm may read meters (or other use measurements), bill customers, and collect revenues on behalf of the government authority.

Contract operations, maintenance, and management often entails more than simply procurement of contract employees by the public sector. A key element of this type of partnership can be access to new or innovative technologies and management systems. Municipalities often find they can establish improved financial management because they pay a known, set service fee to the private operator rather than face annual fluctuations in operating costs.

Contract Services

While "privatization" is often thought to be new, municipalities historically have contracted out many particular aspects of their environmental services. Most public authorities hire engineers to design infrastructure facilities and contractors to build them. They then contract with consultants to assist in start-up and initial operations. Other common "outsourced" services are laboratory analysis, payroll, janitorial, grounds maintenance, and vehicle maintenance.

Municipalities pay contractors a fee for these services and closely supervise contractor performance. These traditional arrangements fit this discussion of public-private partnerships since they help public officials to provide environmental services as efficiently as possible.

Case Study Setting

In preparing this compendium of case studies, every attempt was made to provide an unbiased summary of the information, issues, and processes involved. As much background information as possible was reviewed in the preparation of the case studies. The case studies chosen represent a broad cross-section of privatization alternatives and procurement processes. These case studies range from contract operation of a single plant to contract operations of entire water and wastewater

systems, and from competitivization of public utility operations to full privatization through the sale of utility assets to a private operator. The specific circumstances surrounding each case study, as related to the objectives of the communities, authorities, or utilities (the utility providers), and the procurement process vary significantly. The lessons learned from these experiences, however, are applicable to almost any privatization evaluation and procurement.

Some general lessons to be learned from the case studies include:

- Develop a well-defined set of objectives for evaluating the effectiveness of privatization alternatives and the benefits of an individual proposal.
- Visit communities or operations that have been successfully privatized to clarify the benefits of specific privatization alternatives, as well as the risks and issues that need to be addressed.
- Potential cost savings should not be the sole criterion for evaluating privatization or competitivization alternatives or specific proposals. Short-term economics may be impacted for the sake of more favorable long-term cost savings.
- Procurement is an important part of the evaluation and selection of a privatizer.
- It is critical to provide a "level playing field" for all participants in the privatization selection process. This is particularly important if an in-house bid is to be compared to privatizer bids.
- Objective, measurable criteria for the evaluation and ranking of qualification submittals and proposals will enhance the integrity of the evaluation process.
- It is important to exclude all utility employees whose jobs will be directly impacted by privatization from the evaluation and selection process.
- All affected stakeholders should be involved in the process early.
- Defining how risks are allocated is important in structuring a service contract between the private contractor and the governmental agency.
- Clear definitions of preventive, corrective, and predictive maintenance responsibilities to be assumed by the privatizer, with specific cut-offs for maintenance activities verses capital expenditure pass-throughs to the city or utility, should be included in contract agreements.
- Service contracts should identify specific reporting and record keeping requirements related to facility operations and maintenance.

- If the utility sells assets, it may want to retain ownership of the land the facilities sit on and establish a lease arrangement with the privatizer.

- In the event of full privatization, the purchase agreement should include a repurchase option at fair market value.

- An important aspect of the privatization is indemnification of the utility from compliance violations under private operations.

- Current employees may be asked to be retained by the privatizer for at least a minimum time period. It is possible in some cases for employees to be better off under private contractors due to increased training, benefits, and career opportunities.

- Potential adjustments to the service fee in the contract agreement should be clearly defined.

- An appropriate time frame and venue for completing the negotiation process should be provided. The negotiation process may be streamlined by including a draft service agreement in the RFP. Another possibility is employing simultaneous negotiations with more than one vendor to maintain competition until contract execution.

- Contract oversight and administration may require a significant commitment of utility personnel.

- Labor should be brought into the process early whether optimization or privatization models are pursued.

- The community should define its utility objectives as it evaluates whether privatization or optimization best achieves these objectives.

- A preliminary analysis should be conducted by the community to determine whether a public option, private option, or a combination of both should be pursued.

- In a managed competition, the public sector competitors should be empowered by the community to "look outside of the box" and compete on an equivalent basis as its private sector counterpart.

- When a public sector competitor wins a managed competition, a Memorandum of Understanding (MOU), similar to a service contract with a private contractor, should be prepared. The MOU defines the responsibilities and requirements of the public operator.

Institutional Setting

The section above pointed out some general lessons learned from the examination of the case studies. It is also important to examine institutional factors that may impact the choice of and use of a particular privatization/competitivization model. Some of these factors include the following.

- IRS regulations currently allow management contracts to extend to 20 years under certain circumstances without jeopardizing the tax-exempt status of any facilities that the management contract may relate to.

- Presidential Executive Orders 12803 and 12893 address full privatization involving the sale or lease of utility assets to a private contractor. This type of privatization requires consideration of special issues, such as the repayment of federal grants, if these funds were used to build the facilities. Also, such cases involving the sale or lease of grant-funded assets require federal approval.

- Specific local guidelines for procurement processes must be carefully reviewed and rigorously followed to minimize the risk of any potential legal challenge.

- Labor unions are a significant consideration in the process of privatizing. In some cases, union concessions were gained through serious consideration of the privatizing option. However, utilities are cautioned against trying to negotiate changes in union agreements as a trade-off to privatization. In some states, it is illegal to use the threat of privatization to gain union concessions. It is advisable to bring labor unions and civil service into the process as early as possible. Union requirements can place significant restrictions on the procurement process and should be evaluated and addressed as early as possible.

- For full privatization projects, State Revolving Fund (SRF) moneys are not available. As an alternative, Private Activity Bonds (PABs) may be available and may provide funds at a cost comparable to tax-free revenue bonds available to a public utility. The availability of PABs varies from state to state and can change over time.

- Some states may require state regulatory agency approval for a private contractor to provide a utility service. However, privatization agreements should be structured, if possible, to avoid regulation by the Public Utility Commission, or similar agency.

Discussion of Compendium as "Living" Document

This compendium presents several examples of various types of privatizations across the country. Over time, new examples will emerge of cutting edge privatization approaches, while some of the existing case studies will become obsolete. Therefore, to continue to keep this resource as valuable as possible, it will be periodically updated with new case studies and other case studies will be removed. The frequency of document updates is expected to be every 12 to 18 months.

CHAPTER II: CASE STUDIES

Cost-Effective Environmental Management Case Study

Contract Operations of the Irwin Creek Wastewater Treatment Plant and the Vest Water Treatment Plant

Charlotte, North Carolina

Overview of Public-Private Partnership

The City of Charlotte (City) has established a policy to actively pursue opportunities such as competition and outsourcing to reduce the costs of providing public services. Water and wastewater services are provided for Charlotte and Mecklenburg County by the Charlotte-Mecklenburg Utility Department (CMUD) which operates all three water treatment plants and five wastewater treatment plants serving the area. As a project to explore cost savings opportunities via privatization, CMUD decided to offer one water treatment plant and one wastewater treatment plant for contract operations; the Vest Water Treatment Plant (Vest) and the Irwin Creek Wastewater Plant (Irwin). The procurement process included a qualifications phase to develop a short list of qualified proposers and a technical proposal to evaluate operational capabilities and potential cost savings available using privatization. CMUD also developed its own proposal to compete with the Privatizer' proposals. Elaborate measures were taken to ensure a "level playing field" for all proposers, particularly related to the allocation of indirect department and City overhead costs to CMUD's internal proposal.

Community Demographics

Size. The service area includes all of Mecklenburg County (approximately 500,000 people). Utility service is provided by three water treatment plants and five wastewater treatment plants.

Location. Both plants are located within the city limits of Charlotte, North Carolina.

Economy. Charlotte and Mecklenburg County have a very strong economy and have experienced significant growth over the past several years. This trend is expected to continue for several more years, since Charlotte's economy is based on a large financial services sector (e.g. banking and insurance) and light industry.

Nature of customer constituency. CMUD provides retail water and sewer service to residential, commercial, and industrial customers. In addition, CMUD has signed contracts to provide future wholesale wastewater treatment services for portions of two adjacent counties, Union and Cabarrus.

Facility(s) Description (Treatment, Collection, & Disposal)

Size/age. The Vest plant currently treats 16 to 24 MGD with an average yearly production of 20 MGD. Hydraulic capacity is about 30 MGD. However, the actual range of delivery of finished water can range from 6 to 46 MGD and is determined by CMUD operations at the Franklin Water Treatment Plant.

The Irwin plant treats an average of 12 MGD of mostly domestic wastewater, with a design capacity of 15 MGD. The plant was upgraded and expanded to its present configuration in 1953, with additional upgrades and expansions in 1971, 1979, and 1987. Recently completed (1996) plant upgrades include the addition of a single media effluent filter to provide tertiary treatment. Secondary treatment is based on a modified Bio-Filter activated sludge process.

Regulatory history. CMUD has not experienced any recent compliance problems.

Specific type and extent of privatization. The type of privatization opportunity offered by CMUD involved a five-year contract (a three-year contract with two one-year options for renewal, in accordance with IRS guidelines) for operation and maintenance of the plant facilities only. Each plant was treated as a separate competition opportunity with a separate procurement process, although firms were allowed to submit a combined proposal, in addition to the individual proposals, if there was a cost benefit to the City of awarding both contracts to a single firm.

Overview of Procurement/Competition and Implementation Process

Motivating issues. The City has adopted a policy of actively pursuing opportunities to reduce costs for providing public services to its customers. The City has recently undertaken a major "right sizing"

program for certain services and has strongly encouraged the use of outside competition. The Vest and Irwin privatization projects were intended to serve as pilot projects to determine the potential economic and service quality benefits available from private operators for the delivery of water and sewer services, as compared to continued operation by CMUD.

Procurement Process. The City chose to use a two-stage procurement process. The first stage was to issue a request for qualifications (RFQ) for firms interested in proposing on one or both of the projects. Separate statements of qualifications (SOQs) were required for each project. The City received nine SOQs for the Vest project and eight SOQs for the Irwin project. The objective of this stage of the process was to develop a short-list of highly qualified firms to submit technical/cost proposals. SOQs were evaluated using an evaluation matrix that included the following criteria:

- Management Arrangements;
- Relevant Experience of Company;
- Experience and Qualifications of Key Staff;
- Technical Resources of Company;
- Financial Resources of Company;
- Performance History; and
- Project Understanding / Contracting Suggestions.

A number of subcriteria were developed for each of these criteria. Emphasis was placed on developing specific subcriteria that were as objective and quantitative as possible to provide an unbiased ranking of SOQs. In the final analysis, due to the high quality of SOQs received, only one firm did not make the short-list. As a result, including the City's in-house proposal (the City was pre-qualified), seven proposals were submitted for Vest and six for Irwin.

The primary criterion for evaluating proposals was cost. Proposals were compared based upon a net present value calculation of the proposed annual fees for each of the five years of the operations contract. Technical aspects of proposals were also evaluated, including quality and reliability of proposed operations and maintenance services, the level and skills of maintenance and management staff, the transition plan, and specific areas of risk associated with each proposal.

Community participants/advisory committees/utility advisors. Because CMUD was also proposing on both projects, a number of steps were taken to ensure all proposals were evaluated on a level playing field. First, two separate and independent teams were established within CMUD. One team prepared the City's in-house competitive proposal and was required to follow the same guidelines and requirements for submitting proposals as the private firms. A second team was formed to assist with the overall competition/procurement process. These two teams were prohibited from exchanging information or communicating about the procurement process or the proposal documents.

The second step was to form a six member evaluation team responsible for providing a fair and unbiased evaluation of all proposals. This team consisted of two citizen members of City advisory committees, two non-CMUD City staff members, and two CMUD management staff members. The CMUD staff members were not directly involved in the operation of either plant and were not allowed to interact with any of the staff responsible for developing the in-house proposal.

The third step involved hiring an independent consulting team to manage the procurement process and to assist in the evaluation of qualifications submittals and technical/cost proposals. The engineering firm of Camp Dresser & McKee (CDM) was retained as the consultant to manage the overall procurement process, with assistance from Raftelis Environmental Consulting Group (RECG). RECG was also retained as a subconsultant to assist with evaluating financial qualifications and analyzing cost proposals, including a detailed review of the methodology used to allocate an appropriate share of indirect costs to the in-house proposal prepared by CMUD staff.

Proposal selected and why. The price proposed by CMUD's in-house team was substantially lower than the lowest privatizer proposal, representing annual cost savings of about 30% over its prior year's budget. Other technical aspects of the City's in-house proposal were comparable to the Privatizer' proposals, and the City was selected to operate both plants. The City's in-house proposal included several approaches for reducing operating costs including staff reductions, increased automation, and improved process control equipment. A separate cost center and special cost reporting requirements were set up to track the performance of the City in meeting cost savings goals specified in the proposal for the operation of the plants. Failure to meet the cost savings would mean that the City's contract could be terminated and operation of the plants would again be offered for privatization. Performance incentives were developed making employee bonuses contingent on cost savings generated above that specified in the proposal. Since the contract start date was July 1, 1996, performance results are not yet available to evaluate the staff's ability to meet its cost savings goals.

Time frame. The procurement process began in late spring 1995 with the formation of the in-house proposal team and the evaluation committee. Utility advisors were engaged in the summer of 1995; RFQs were issued in August 1995; and RFPs were issued in January 1996. The proposal evaluation process was completed by May. Since the City won the contract, which was consummated with a Memorandum of Understanding between the City and the group formed to prepare the in-house proposal, the implementation process was shortened as it was not necessary to negotiate a service agreement or implement a transition to private operations.

Cost to the community for procurement process. The cost to the community was approximately $500,000, including cost for utility advisors and consultants assisting with the procurement process, and consultants hired by CMUD staff to assist in preparing proposal documents for the in-house proposal. This cost does not include the extensive time commitment of CMUD staff and other City staff in managing the process and preparing the in-house proposal.

How consensus in the community was achieved. Consensus toward increased competition as a means of reducing costs has been building over time as a result of prior experience with competition and privatization for other government functions in Charlotte.

Labor Issues

Nature and extent of labor union involvement. Charlotte utility services are not unionized.

Employee issues addressed in service contract. For this procurement, neither the City nor the privatizer was required to offer employment to all existing employees at the two plants. The successful proposer was required only to maintain staffing at adequate levels to meet all requirements of the service contract, including proper certifications and any training costs associated with maintaining necessary certifications. The winning proposal made by the City included both a reduction in the operating staff at the two plants and a reorganization of staff schedules in order to reduce costs and maintain compliance with relevant operating requirements.

Out placement services and displacement process. Proposers were not required to provide plans for Out placement services or assistance for displaced employees. However, the City anticipated placing displaced employees in existing unfilled job openings in the utility department or elsewhere in City operations.

Public Policy Issues and How They Were Addressed

The most significant public policy issue addressed by this competition/procurement process was how to ensure an objective, fair, and transparent evaluation of proposals among all proposers, particularly the in-house proposal prepared by CMUD staff. The City recognized that in order to attract qualified vendors and encourage competition, it was necessary to provide a "level playing field" for evaluating public and private proposals. Experience with similar procurement processes in Charlotte, as well as the experience of other communities, resulted in significant concern over potential legal challenges to the procurement process if there were any evidence that the evaluation process was not as fair and objective as possible or that the in-house proposal received preferential treatment.

Careful planning of the procurement process was very important, particularly related to the structure of the CMUD proposing team and the requirement that the proposing team and the evaluation team maintain complete independence. Another issue of particular concern was the evaluation of costs included in the in-house proposal. In preparing the in-house proposal, CMUD staff was required to

identify all direct costs related to the operation of each plant which were part of the scope of operations identified in the RFP. In addition, other direct costs which were not part of the proposed operations contract or were considered to be "pass through" costs to the City, were also identified. These costs were identified at a level of detail sufficient to document the potential cost savings offered by the in-house proposal and sufficient to provide a basis for tracking and monitoring the future success in achieving these proposed savings.

Indirect costs were also subjected to an extra level of scrutiny. All indirect costs related to City, CMUD department, and operating division overhead were reviewed by RECG and categorized as variable, semi-variable, or fixed costs. Additional analysis of variable costs was conducted to determine which costs may be eliminated under privatization compared with continued CMUD operation, and whether or not these costs should be included in the in-house proposal. In order to provide a level playing field, expected costs for contract administration and oversight were reviewed to determine if these costs represent additional, incremental costs to the City, or if these costs could be absorbed by excess capacity available to CMUD management staff as a result of privatization. Any additional costs related to contract administration were added to the Privatizer' proposals.

Concern over the perception of an objective process led to extra efforts to keep all parties informed about all aspects of the procurement/competition process. In particular, private companies were given several opportunities to comment on the procurement process. A bidders' conference was held where the procurement and evaluation process was explained, including the procedures required of CMUD staff in preparing the in-house proposal. A draft RFP was submitted to all qualified Privatizers for their review and comments. The draft RFP included a draft service agreement as well as specific instructions on how private and in-house proposals were to be prepared and submitted. The issue of maintenance costs and the proposer's responsibility for these costs was addressed by clearly defining the requirements of corrective, preventive, and predictive maintenance and the cut-offs or limits on maintenance costs that the proposers were expected to include in cost proposals.

Economics of Case Study for the Community and Privatizer

Short-term economic impacts. Based on the City's in-house proposal, cost savings of approximately 30% are expected in the first year of the contract, as compared to the previous year's budget.

Rate impacts. Since the operation of these two plants represents only a small portion of the total CMUD budget, the impact on rates will not be significant over a five-year time frame. However, the implication for achieving similar savings throughout CMUD operations may have a significant impact on long-term costs and future rate increases.

Noneconomic Benefits to Community

Quality of service. Improved quality of service was not a significant goal of privatization, except in the area of improved maintenance procedures and reporting. By carefully defining the specific types of maintenance to be performed, including computerization and record keeping requirements, and by identifying limits on maintenance costs assumed by the privatizer, the City expected to benefit from improved maintenance and ensure that the value of the City's assets would be preserved.

Drawbacks

Increase in cost of capital. Cost of capital was not an issue, since regardless of the outcome of the competition process, the City would retain responsibility for capital expenditure at both plants. No significant capital expenditure was expected at either plant over the five-year life of the contract.

Perceived loss of control. The City's previous experience with privatization has been favorable, and perceived loss of control was not a significant issue. Adequate control would be maintained through the provisions of the service contract and by retaining ownership of the land and assets.

Lessons Learned

Although the City did not decide to privatize the operation of the two plants, the procurement/competition process was extremely successful and should serve as an effective model for other communities. This project demonstrates the importance of a number of valuable lessons.

- Open communications between the City and potential Privatizer can help foster an atmosphere of cooperation and fair competition, even when the City is competing directly with the Privatizer. Benefits can include higher quality proposals and improved opportunities for cost savings.

- An objective evaluation process that provides a level playing field for all proposers, public and private, is essential to attract qualified Privatizers and minimize risks of legal challenges. An objective and quantified process may provide more straightforward differentiation among qualification submittals.

- A two-step procurement process, with a separate RFQ and RFP, can be an effective way to streamline the overall process, particularly if a large number of proposals are anticipated.

Qualifications submittals are easier and less expensive for firms to prepare and submit, while still providing an effective way for the utility to screen out undesirable candidates and potentially develop a "short list" of highly-qualified proposers. Generally a short list of three to five firms is preferable. Short-listed firms are encouraged to put maximum effort into preparing technical and cost proposals since there is a higher probability of being selected. If a short list of firms is developed, the time required by the evaluation team and consultants to evaluate proposals is reduced, which can also reduce the cost of the procurement process.

- The RFP document should include a draft service agreement to further define the proposed scope of services and responsibilities to be assumed by the privatizer. This draft service agreement should be as comprehensive and explicit as possible. This information will allow the proposers to develop specific recommendations for operating and maintaining the facility, and can provide a more consistent basis for comparing proposals. It can also lead to fewer problems in negotiating the final service agreement.

- The evaluation of indirect costs for preparing a base-line budget or for analyzing an in-house proposal, can be complicated and time-consuming. It is better to set up workable guidelines and procedures for evaluating these costs and for evaluating and comparing public and private cost proposals, rather than trying to analyze these costs completely. It is possible to provide a level playing field by focusing on the process without becoming mired in the details. However, it is also important to consider contract administration and implementation costs as potential additions to private sector proposals.

- Careful definitions of maintenance requirements and costs assumed by the contract operator and the City provide an important foundation for high-quality proposals. It is important that both sides understand the maintenance risks to be assumed by the contract operator, so cost-effective proposals can be prepared and potential cost savings to the City can be evaluated.

- If a public entity is given the opportunity to propose with the same operational flexibility as the private sector, then significant cost savings can be achieved with an in-house proposal. The proposal process can provide an enormous incentive for the public sector to respond. However, it is important to recognize that certain institutional constraints may be unavoidable and may provide an advantage to the private sector. Similarly, other factors may favor the public sector. The greatest total benefit to the City and to the customer occurs when both sides have an equal opportunity to develop creative and cost-effective proposals.

Community/Privatizer Contact for Additional Information

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Cost-Effective Environmental Management Case Study

Contract Operations of the Belmont and Southport Advanced Wastewater Treatment Facilities

Indianapolis, Indiana

Overview of Public-Private Partnership

This public-private partnership involved the contract management, maintenance and operations of two Advanced Wastewater Treatment (AWT) facilities by a private operator. The City of Indianapolis (City) built these AWT facilities to meet an unusual challenge. The 1972 Clean Water Act, along with subsequent state and federal regulations, set rigorous standards for all US cities. For Indianapolis, the standards require removal of at least 97% Biochemical Oxygen Demand and 80% of ammonia nitrogen to further reduce wastewater oxygen demand. The Indianapolis Department of Public Works (DPW) must process up to 245 MGD at the plants, and must discharge the effluent into the White River, a very small/low flow body of water. The DPW built the facilities (Belmont and Southport) within seven (7) miles of each other. The total program cost was about $250 million and involved numerous technological innovations and state-of-the-art technologies. About 75% of the funds were made available via grant program of the U.S. Environmental Protection Agency and 10% by the Indiana State Board of Health. Contract operations of the two facilities is projected to save the City about $60 million over five years.

Community Demographics

Size and Location. The two AWT facilities serve approximately 850,000 to 900,000 people (400,000 accounts) in the greater Indianapolis area, which includes all of Marion County. The facilities are also within close proximity to the Indianapolis International Airport.

Economy. The Indianapolis area has a very stable and diversified economy, with average growth of approximately 1.5% annually.

Facility(s) Description (Treatment, Collection, & Disposal)

Size/age. Total average treatment capacity of the two AWT plants is 300 million gallons per day (150 each). The plants had been operating for 11 years, as of July 15, 1993, the date of the RFP for contract operations.

Facility overview. Prior to privatization, both facilities were sophisticated, state-of-the-art facilities operated at a high level of efficiency. These facilities include preliminary treatment, primary clarification, biological treatment via bio-roughing and oxygen nitrification, followed by secondary clarification, effluent filtration, and ozone disinfection prior to effluent discharge into the White River. Also included in the operations contract are the associated sludge handling facilities, laboratories, and pre-treatment programs. Excluded from contract operations were sewer collection, billing and collection, and customer service functions.

Overview of Procurement/Competition and Implementation Process

Motivating issues. The City wanted additional efficiencies in the management, operation and maintenance of the facilities and cost savings for the City and ratepayers. A consulting report prepared by Ernst & Young stated the City wanted to "determine the value and alternatives for leveraging the assets to generate new sources of revenue for wastewater capital improvements."

Ernst & Young was hired to study six options for the City, including selling the City's assets. One option was a public-private partnership; operation of the system by a private contractor with ownership remaining with the City. The analysis also determined the value of the system, to explore the option of a possible sale to private investors. The consultant recommended against private ownership primarily because significant rate increases would be needed to offset the loss of a 35% property tax subsidy provided under public ownership. Also, since the facilities were built with federal grant money, sale of the plants would occasion the payment of almost half of the cash inflow from the sale back to the federal government. Ernst & Young recommended that the City competitively propose the operation and maintenance of the facilities. In selecting this option, the City retained tax advantages and gained with substantial savings via operational efficiencies.

Community participants/advisory committees. A task force including various members of the City Council and representatives of the stakeholders was formed to evaluate the proposals.

Stakeholders included all members of the community affected by the outcome of the decision -- City-County Council members, utility management and staff, regulatory officials (concerned with effluent limits), and general citizens. The inclusion of this large, diverse group of people early in the decision-making process greatly facilitated the privatization process in the later stages.

Privatizer selected and why. White River Environmental Partners (WREP), a consortium of private firms, was selected for the operations, maintenance, and management (OM&M) of the two facilities. The selection was based primarily on economics and the professional capabilities of the contractor. WREP's proposal guaranteed 38% savings over the previous year's budget, and the professional capabilities of the companies within the consortium were considered superior to the other proposals. WREP consists of several large national and international companies: LAH White River Corporation, JMM White River Corporation, Indianapolis Water Company (IWC) Services, IWC Resources Corporation, GWC Operational Services, JMM Operational Services, Lyonnaise American Holdings, Lyonnaise des Eaux-Rumey, GWC Corporation, and Montgomery Watson Americas.

The two closest proposals were AmericanAnglian and the internal proposal submitted by the existing employees. Although WREP and AmericanAnglian were close in terms of economics, the City believed it would benefit from the extensive professional capabilities of WREP. The economics of both WREP and AmericanAnglian surpassed the economics of the internal proposal.

Regulatory involvement. Since the City of Indianapolis has maintained ownership of its wastewater system, the Indiana Department of Environmental Management (IDEM), the state environmental regulatory agency, does not have jurisdiction over the facilities' operation or wastewater service rates. However, federal tax regulations do restrict the length of a contract between government private entities, although renewal of a contract is not constrained.

Time frame. The entire process, including the preparation time for procurement, took 8 to 10 months. The City signed an operational contract with the consortium on December 23, 1993, and operations were transferred to the consortium on January 30, 1994.

Cost to the community for procurement process. The investment was estimated to be approximately $200,000 to $300,000 for advisors, consultants and engineers. This amount was paid back to the City within a few weeks, since the annual operating budget was immediately decreased from $30 million a year to $17 million a year.

How consensus in the community was achieved. The inclusion of representatives from such a large group of stakeholders in the task force evaluation committee assisted the privatization process by taking all interests into consideration early in the evaluation process.

Labor Issues

Nature and extent of labor union involvement. This privatization was one of the City's first and relations with the union, the American Federation of State, County, and Municipal Employees were contentious. The union sued the City and released media ads denouncing privatization. After working through numerous privatizations together, the City and union have much improved relations, such that the City and union recently won a joint award from the Ford Foundation.

Number of union employees. AFSCME is a rank-and-file union. Workers paid weekly by the hour were union members. Engineers and other management positions paid biweekly were not.

Acceptance of privatization by labor union. The consortium agreed to honor the existing agreement between AFSCME and the City when the privatization occurred.

Employee issues addressed in service contract. All employees were guaranteed an interview by the consortium. If not hired by them, they were guaranteed an equivalent job with the City. The agreement guaranteed employees jobs, offered better advancement opportunities, additional training, and in some cases, more pay with the consortium. Over the two-year period of contract operations, WREP workers earned an average of 3% more than under City operations.

Out placement services and displacement process. The consortium hired about half of the existing employees. The remainder were placed using a "holding pool" concept. It was expected to take at least nine months to find jobs for these employees; however, as a result of the strong economy in Indianapolis all employees were placed in about two months.

Public Policy Issues

Issue	*How It Was Addressed*
How was the consortium to be held accountable for compliance with environmental regulations, customer service levels, and other relevant requirements?	First, it had to meet NPDES requirements, and was responsible for any penalties as a result of violations. It was also required to maintain the same effluent level or better than under City operations (chief tool for measuring the success of private operations). Lastly, it was subject to selective audit by an overseeing board to ensure contract compliance and keep the City apprised of the status of private operations.

How was the community assured that the facility would be expanded to meet future needs?	All major capital improvements remain the responsibility of the City. The consortium has been required to inform the City of the need to upgrade or expand, but the final decision to make improvements has remained the City's to make in conjunction with its engineers.

Economics of Case Study for the Community and Privatizer

Expected benefits of privatization. The City believed that equipment life could be prolonged, training of employees could be improved, and additional benefits could be reaped from having the AWT facilities operated and maintained over a number of years by a private contractor having experience with a variety of similar systems. The private operation and maintenance of the AWT facilities was viewed by the City as a long-term project.

The City-run AWT facilities had won numerous awards for their operations and safety. The City did not fully realize the inefficiency of its operations until significant cost savings occurred after privatization. The private operators implemented new process controls and computer operations as a result of their access to more sophisticated technology which was unavailable to the City operators.

Short-term economic impacts. After two years, WREP operations has saved the City $22.6 million in operations and maintenance costs. WREP operations has been projected to save approximately $60 million over five years. Between 1993 and 1994, the AWT facilities' O&M budget was reduced from $30 million to $17 million and the number of public employees was reduced from 328 to 196. By June 1996, 168 WREP employees staffed the AWT facilities.

The City also received $57,010 in energy rebates from the Indianapolis Power and Light Company in recognition of energy efficient motors, which were designed and installed by WREP personnel.

Rate impacts. Although rate increases have been recommended and anticipated, the City has been able to hold rates constant due to cost savings associated with the privatization arrangement. However, rates are expected to grow slowly over time because of numerous factors, including inflation. Instead of lowering rates, the City of Indianapolis deposits all savings associated with privatization into a Sewer Sanitary Fund. This fund is used to enhance the City's economic competitiveness by improving the City's system. For example, funds have been used to dry out interceptors and collector systems and to provide sewer service to new areas.

Noneconomic Benefits to Community

Compliance history. Since privatization, effluent violations have been reduced from seven under City operations to only one. According to an official with the City of Indianapolis, rains have been heavier than usual since the consortium began operations. Nevertheless, WREP operates at about one-fifth to one-seventh the exceedence rate (the rate at which violations of IDEM and EPA regulations occur) of that of City operations under stressful conditions, which provides additional evidence of the success of consortium operations.

The White River is a low flow river which receives outflows from various local industries and unitary systems, in addition to flows from the City's combined sewer and stormwater system. A fishkill recently occurred in the White River, and industrial run-off from the local industries has been suggested as a potential cause for the kill. Another suggestion has been that the kill was simply a natural phenomenon which occurred due to the extreme low water being experienced at the time. In spite of these possibilities, the IDEM has recommended fines to the City and WREP for the fishkill, but the appeals process is not over and no fines have been paid.

Safety. The accident rate at the AWT facilities decreased 70% in the first year of WREP operations, and decreased 42% again in the second year. This demonstrates an overall 80% reduction in the number of accidents per year. The Indiana Water Pollution Control Association (IWPCA) presented its annual safety award to WREP in 1995.

Technology changes. New process controls and computerization have been added to the facilities since the consortium began operations. The private operators have greater access to the newest technologies through their European parent companies.

Employee relations. Employee grievances were reduced from 38 under City operations to only one under WREP operations in 1994, and none in 1995.

Potential Drawbacks

Reimbursement of federal grant and/or state SRF funds. Since contract operations was chosen, and the City has retained ownership of the facilities, the reimbursement of federal grant and/or state SRF funds was not necessary, and the City benefits from tax advantages.

Negative aspects of long-term contracts. The contract is only for five years. At the end of the contract term, the contract will have to be renegotiated. Any changes desired by the City at that time can be incorporated into a new contract, or the City will need to re-propose the operations.

Labor skepticism. The consortium entered into the same agreement with the union as the union previously had with the City. Since privatization, employee grievances have decreased from 38 in 1993 to 1 in 1994, and none in 1995.

Lessons Learned

The City of Indianapolis has introduced competition into a variety of services originally performed by the government. Although the City approaches each competition individually, it has developed a set of general principles which guide all of its competition/privatization efforts. So far, the City's privatization efforts have resulted in total savings nearing $200 million. Below is the City's list of general principles for competition, taken from its "General Overview of Competition & Privatization Initiatives at the City of Indianapolis/Marion County Indiana" dated June 11, 1996:

- "The key to positive results is *competition*. Privatization is just one of the several possible outcomes.

- Invitations to competition should be *public*. Specifically, competition must be open to all qualified contestants to elicit everyone's most aggressive response. The Request for Proposals ("RFP") process is used by the City because under Indiana law, the RFP process (unlike formal proposals) permits negotiations to continue after a leader or leaders are selected. In the City's experience, these final negotiations nearly always enhance deals.

- Evaluations of competitive responses need to be *inclusive*. The City usually accomplishes this by forming *ad hoc*, cross-functional evaluation teams, representing all the major stakeholders and line organizations.

- To the extent practical, existing employees should be encouraged to enter competitions for their functions. In practice here, this increasingly translates into involvement of the union membership and leadership in competitions. City line management, and consultants hired at City expense, are often involved in development of these "intrepreneurial" responses. The creativity of the union leadership in these competitions was recognized in 1995 by an *American Government Award* from the Ford Foundation, presented jointly to the union and the City.

- A key technical resource for development of effective "intrepreneurial" proposals is accurate cost accounting. Activity Based Costing (ABC) is

the City's preferred methodology.

- Although the City often seeks estimates and advice from consultants and "experts", when in doubt it lets the marketplace speak. For example, the study conducted for the privatization of the two AWT facilities estimated possible savings between 5-10%. Later RFPs eventually led to a deal saving a minimum of about 40%, or more than $60 million over five years.

- Deal documents need to explicitly address performance standards, and provide *economic* incentives for vendors to attain and maintain performance goals. Such provisions must be implemented with effective contract oversight and management on the City's part."

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Cost-Effective Environmental Management Case Study

Contract Operations of City Water Department

Jersey City, New Jersey

Overview of Public-Private Partnership

In the summer of 1995, the City of Jersey City (City) sought to privatize the operations of the City Water Department through the efforts of the newly-elected administration. The new Mayor, the Honorable Bret Schundler, was elected based on a pro-business and privatization platform. The new City government recognized the "institutional gridlock" causing inefficiency in the operations of its water system. After issuing a comprehensive RFP and carefully evaluating the proposals, the City entered into a three-year operating contract (with two optional one-year renewals) with United Water Resources (UWR). The contract provided for a $2.5 million up-front concession payment to the City and is projected to save the City $38.5 million over the five-year term.

Community Demographics

Size and location. The Jersey City Water Department provides water service to approximately 32,000 retail customers located in the New Jersey metropolitan area across the Hudson River from New York City. Jersey City is in Hudson County, bounded on the north by Hoboken, New Jersey and on the south by Bayonne, New Jersey. The Boonton Water Treatment Plant is located adjacent to one of the City's water sources, the Boonton Reservoir, approximately 23 miles northwest of the City. Potable water is pumped via aqueduct to the Jersey City area, where it is distributed to retail customers. Wholesale customers are served along the aqueduct.

Economics. The City has a favorable cost of living and tax environment for attracting business. Wages are relatively low as are taxes and other city charges for utility services. Many New York City companies have offices in Jersey City due to the relatively low cost of doing business. In recent years

the City has had economic problems, and as a result, the Mayor has focused on the City's economic development and financial challenges. He has been instrumental in the promotion of privatization and desires the most cost-effective method for providing water services to the City's customers.

Customer constituency. The City provides both retail and wholesale water service, and approximately 29,000 of the City's 32,000 retail customers have meters with a diameter of one inch or less. The City provides wholesale water service through individual contracts with UWR of Hackensack, New Jersey and the municipalities of Hoboken, Lyndhurst, and West Caldwell.

Facility Overview. The City's water system consists of a City-owned watershed, two reservoirs, a treatment facility, and an extensive transmission and distribution system. The City owns and maintains two reservoirs, the Split Rock and the Boonton, and about 5,700 acres of watershed around the reservoirs. The reservoirs have capacities of 3.3 and 8.0 billion gallons a day, respectively. The 80 MGD Boonton treatment facility receives average daily flows of about 55 MGD.

Regulatory history. The government agency which regulates government-owned water and wastewater utilities is the New Jersey Department of Environmental Protection. The City has had compliance problems with state and federal regulations in the past. In particular, the City had been stockpiling sludge from the water treatment plant and was forced to dispose of this stockpile, and further sludge generated, into a regulation disposal site.

Specific type and extent of privatization. The City entered into a three-year operating contract (with two optional renewals for one-year periods) with UWR. The contract provided for the privatization of all water services including source of supply, treatment, distribution, meter reading, billing and collection, and laboratory services. The only functions remaining with the City were rate setting and policy-making. A creative cost-sharing arrangement was negotiated to encourage a decrease in uncollectables, to promote marketing of additional water services to wholesale customers, and to reduce the amount of unaccounted-for water. The service contract provides a formula for calculating these incentives to UWR.

Overview of Procurement/Competition and Implementation Process

Motivating issues. The City considered privatization as a result of the new City administration's focus on business and recognition that "institutional gridlock" in the City had substantially constrained the performance of the water utility department. The new Mayor had been elected on a platform which included a focus on privatization. In addition, as a result of uncollectables and unaccounted-for water, only 68% of the water produced was ultimately being billed and collected. In comparison, a well-operated system should have less than 15% non-revenue water and less than 1% uncollectables.

Community participants/advisory committees. A steering committee was formed, consisting of members of the City Council and key staff personnel involved in providing water services. No formal external advisory committee was established, although the labor unions were active in providing input during the process. Utility staff who were involved in the process included the Director of Water Operations, the Deputy Director, the Chief Engineer, and the Manager of Water Operations. In addition, the City's Business Manager played an important role in the process.

Utility advisors. Raftelis Environmental Consulting Group (RECG) managed the privatization feasibility and procurement process. RECG was assisted by W.R. Lazard on relevant financial issues.

Privatizer selected and why. A comprehensive RFP was prepared which included in-depth evaluation criteria, and UWR was selected as the privatizer. The proposals were evaluated based on the following criteria:

- technical merit of the proposal;
- proposer's management, operations and maintenance approach;
- experience and responsiveness of the proposer;
- capability of the proposer to complete the obligations of the agreement; and
- price of the proposal.

Regulatory involvement. The state of New Jersey had recently passed a new privatization procurement act for water utilities, the New Jersey Water Supply Public-Private Contracting Act, and Jersey City was one of the first communities to follow this act. The privatization required approval from several agencies within the state, including the Public Utilities Board, the Department of Environmental Protection, and the Division of Local Government Services in the Department of Community Affairs. Also, a New Jersey municipal procurement act, used for processing government services, was deemed irrelevant to Jersey City's case since the procurement was a privatization.

Time frame. The procurement process took approximately one year, including the issuance of an RFQ and an RFP, and implementation. The final agreement was signed on April 1, 1996.

Cost to the community. External cost to the community for the process was approximately $300,000 to $350,000.

How consensus in the community was achieved. Given the large cost savings associated with privatization and the increased revenue from the marketing of services to wholesale customers, it became apparent that it would be advantageous for the City to pursue privatization. Thus gaining the consensus of the City Council was relatively straightforward. There was substantial focus on union issues so as to promote agreement among labor representatives as well.

Labor Issues

Nature and extent of labor union involvement. Labor unions were brought into the procurement process early and were heavily involved in negotiating the service contract. An innovative concept of leasing employees became the basis for the agreement. Under such an arrangement, the employees remained Jersey City employees but were leased by the privatizer. All benefits and salaries were paid by the privatizer, but the municipal benefits accrued in the pension plan program were retained by the City. There is still some question as to whether recent state law has allowed the employees to retain all the privileges of municipal employment in the state retirement system.

Outplacement services and displacement process. The service contract required that the privatizer utilize all employees for at least one year. Afterward, the privatizer could release these employees back to the City. A special fund was set up to cover the cost of displacement after the one-year period.

Public Policy Issues

Issue	*How It Was Addressed*
How would the possible displacement of City employees be handled?	Frank negotiations with the labor unions from the beginning of the privatization process facilitated the transition to private operations. The decision to require UWR to use City employees for at least one year resulted from negotiations with all parties.
How would UWR be held accountable for compliance with state and federal environmental regulations and for maintaining an adequate customer service level?	In the service contract, UWR assumed responsibility for potable water quality and liability for any fines issued due to regulatory violations. In addition, a comprehensive and continuous reporting system from UWR to the City aided the City's oversight of private operations. A detailed description of UWR's customer service responsibilities was incorporated into the contract as well.

Labor negotiations play a major role in the privatization process, and should not be downplayed.

"It cannot be overly emphasized that a project of this nature and magnitude could not be accomplished without the administration and governing body working in concert along with the selected consultant and the appointed contract selection committee to achieve clearly defined objectives. As stated in your case study, a comprehensive and clearly written RFP is essential...Also the Jersey City RFP contained a Draft Service Agreement which gave insight to the proposers of what would be contractually required of them. This feature was invaluable at the time of actual contract negotiations as all parties were on the same page. A substantial time and cost savings was realized by everyone due to these features." – Joe Macula, City Finance Director

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Cost-Effective Environmental Management Case Study

Sale of Wastewater Treatment Plant Under Executive Order 12803

The Miami Conservancy District
Municipalities of Carlisle, Franklin, and Germantown, Ohio

Overview of Public-Private Partnership

This public-private partnership involved the sale of the 4.5 MGD wastewater treatment facility by the Miami Conservancy District (MCD) to Wheelabrator Environmental Operational Services (Wheelabrator EOS) of Hampton, New Hampshire. The transaction represented the first sale of a grant-funded environmental facility to the private sector under Executive Order 12803 as signed by President Bush in April 1992. MCD is a flood control government agency serving the counties abutting the greater Miami River around the Dayton, Ohio area; and the Franklin area wastewater treatment plant serves the municipalities of Carlisle, Franklin, and Germantown, as well as Montgomery and Warren counties. The 4.5 MGD plant was completed in 1972 at a cost of $3.2 million, including a $1.75 million federal grant. Since the municipalities and counties had existing service agreements with MCD, it was necessary for them to approve the sale of the facility.

Community Demographics

Size. The Franklin area wastewater treatment plant (Franklin WWTP) serves a population of approximately 40,000 in the three municipalities of Carlisle, Franklin, and Germantown, and incorporated areas of Montgomery and Warren counties. Growth has been moderate but steady over the past several years, and area governments have been very focused on economic development.

Location. The Franklin WWTP is located approximately 30 miles southwest of Dayton, Ohio.

Economy. The economy of the area serviced by the Franklin WWTP is driven primarily by the manufacturing industry. Additionally, several process wastewater industries in the area provide jobs for residents. All communities are aggressively recruiting new industry into the area, and having adequate sewer capacity for economic development is a major concern.

Nature of Customer Constituency. The plant serves about 8,000 households and several major industries including pulp and paper mills, pharmaceutical manufacturers, and industrial launderers. These industries represent 33% of the plant's total effluent flow and over 75% of plant loadings.

Facility Description

Facility Overview. The 4.5 MGD plant was completed in 1972 at a cost of $3.2 million, including a federal grant of $1.75 million. Plant upgrades and expansions totaling $7.5 million were completed in 1984, 1989, and 1991. The facility was designed to treat a combination of industrial and domestic waste. Current flows average slightly greater than 2.0 MGD.

Regulatory History. The wastewater treatment plant is regulated by the Ohio EPA. The transfer of the Domestic Sewage Exclusion (DSE) from MCD to the private and public partners (Wheelabrator EOS and the three municipalities of Carlisle, Franklin, and Germantown) was a key issue in the sale of the facility. In addition, the Ohio Water Development Authority (OWDA) had loaned approximately $5.0 million to MCD for upgrades and expansions, and OWDA had to approve the transfer. A key element of the transfer was the assurance that the OWDA tax-exempt status of the current outstanding bonds would be preserved. Given the fact that the municipalities maintained sewer collection, rate setting, and customer service responsibilities for their retail customers, the transaction did not fall under the jurisdiction of the Ohio Public Service Commission.

Overview of Procurement/Competition and Implementation Process

Motivating Issues. Since its construction in the early 1970s, flood control has been the major mission of MCD. As a result of a strategic planning exercise in the late 1980s, MCD recognized the need to divest itself of its wastewater treatment facility and concentrate on its major focus - flood control. Therefore, MCD moved to contract operations of the Franklin WWTP in July 1987. However, MCD maintained its NPDES permit, the responsibility for rate setting over its bulk customers (three municipalities and two counties), and the management of the municipal industrial pretreatment program. Over the next several years, MCD considered full privatization, and there was significant controversy as to who would be a suitable owner of the facility. As a result of Executive Order 12803, the full privatization of MCD's Franklin WWTP became an EPA pilot project for

transferring a wastewater treatment facility to a private owner. After significant economic analysis, policy evaluation, and other relevant considerations, MCD, the bulk municipal customers, and Wheelabrator EOS agreed to the sale of the facility to Wheelabrator EOS.

Major Community Participants

Individual	*Organization*	*Title*
James L. Rozelle	MCD	General Manager and Chief Engineer
Samuel L. Coxson	City of Franklin	City Manager
James Mears	City of Franklin	Mayor
Matthew Coppler	Municipality of Carlisle	Municipality Manager
Patrick Long	Municipality of Carlisle	Mayor
Edward L. Schwaberow	Village of Germantown	Village Manager
Theodore Landis	Village of Germantown	Mayor

Community Advisors

Individual	*Organization*	*Title*
Frank Leone	Raftelis Environmental Consulting Group, Inc.	Environmental Consultant.
Michael Deane	U.S. EPA	Public-Private Partnership Coordinator

Privatizer Selected and Why. The communities and MCD negotiated with Wheelabrator EOS to own and operate the Franklin WWTP. Wheelabrator EOS had been the successful contract operator for over six years and had been an effective leader in dealing with EPA regulations, structuring financing of similar projects, and consummating relevant sales issues. Further, Wheelabrator EOS had a long history of dealing with similar transactions in the waste energy business, and Ohio law allowed MCD to conduct competitive negotiations directly with Wheelabrator EOS without going through a procurement process.

Regulatory Involvement. The Ohio EPA, EPA Region V Headquarters in Chicago, the US EPA, and the US Office of Management and Budget were all key in approving the wastewater facility sale. In addition, the Ohio Water Development Agency had to approve the transfer to ensure the continued tax-exempt status for outstanding bonds issued on behalf of MCD.

Time Frame

April 30, 1992	Executive Order 12803 signed by President Bush.
December 1992	EPA Administrator Riley approved the sale of the Franklin WWTP as an EPA pilot project for Executive Order 12803.
August 1993	Consultant hired to evaluate privatization feasibility and to assist in implementing the transaction.
June 1994	Municipalities approved service sales contract with Wheelabrator EOS.
July 11, 1995	EPA Administrator Carol Browner approved the sale of the Franklin WWTP to Wheelabrator EOS.

Cost to the Community for Procurement Process. The feasibility analysis project cost approximately $35,000. In addition, professional fees for contract negotiation, preparation of the service agreement, and relevant supporting activities were approximately $150,000. Much of the legal fees were absorbed by Wheelabrator EOS and would have translated into additional expenses of more than $100,000.

How Consensus in the Community was Achieved. Community consensus was achieved by committed involvement from the municipal managers, MCD Director, community advisors, and Wheelabrator EOS. The municipal managers kept the councils well informed, and effective presentations were developed to educate their councils and gain support. Economic and non-economic benefits, as well as drawbacks, were discussed openly with the councils. The positive benefits of the sale and frank discussions with the communities were the main ingredients of the successful transfer. Montgomery and Warren counties were similarly brought on board at a later date to support the project.

Labor Issues

There were no labor issues that arose since the plant was already under private operations.

Public Policy Issues

Issue	*How It Was Addressed*
Land ownership	The municipalities believed it in their interest to own the land and lease it to the new owner. Under this approach, they maintain certain control over the sale arrangement. A prepaid land lease was structured to provide them with payment for use of the land.
Assurance to the communities of expansion for future needs.	The service contract required Wheelabrator EOS to expand the facility at certain threshold points. Formulas were provided in the service agreement allowing for the recovery of expansion costs.
Maintenance of municipal industrial pretreatment programs and compliance with environmental regulations.	The three municipalities and Wheelabrator EOS are co-permitees. They must work together to ensure proper influent is discharged in the facility and appropriate treatment levels are maintained.

Economics of Case Study for the Community and Privatizer

Since the procurement was sole-sourced, Wheelabrator EOS agreed to let the communities' advisors review the economics under a confidentiality agreement. The advisors' analysis showed that over the 20-year contract period, the cost of continued MCD operation versus Wheelabrator EOS operation was basically the same. The advisors were convinced that Wheelabrator EOS would make only reasonable returns, similar to that allowed under regulation by the Ohio Public Utility Commission. Wheelabrator EOS's cost in the early years of the agreement would be substantially lower than MCD's, but as existing bonds are paid off, MCD costs become lower. The sale of the plant was in effect a "refinancing of the mortgage" of the plant over the contract life. The sewage treatment rate was reduced from the existing MCD rate of $1.69 per 1,000 gallons to the Wheelabrator EOS rate of $1.45 per 1,000 gallons, a 14% reduction. It was agreed that the Wheelabrator EOS cost would increase by the CPI each year.

Noneconomic Benefits

The communities were able to assign certain ownership risks to the private partner via the service contract, and can repurchase the facilities at the end of the 20-year term if so desired. The arrangement also allows for responsive expansion of the facility as economic growth materializes, and the communities have available to them the technical resources of a major environmental corporation.

Lessons Learned

A major lesson learned was to have all affected political jurisdictions on board early; however, by not including Montgomery and Warren counties in the early stages, the consensus process took longer as all relevant agreements were executed.

Another lesson learned was not to be misguided about the amount of time it takes to navigate through the approval process, particularly when federal approvals are required for the sale of grant-financed assets. Gaining approval for a sale is complex and requires appropriate internal and external input and commitment. Although the time frame today may be less than the 30-month period experienced by MCD, the amount of time required to receive all approvals may still be substantial.

In addition, negotiation with a private contractor is a careful and important process. It is imperative to negotiate with the proper resources, time frame, and venue in mind. Instrumental in the process is appropriate economic, legal, and engineering input.

Community/Privatizer Contacts for Additional Information

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Cost-Effective Environmental Management Case Study

Concession Operations of Water and Sewer Facilities

Township of North Brunswick, New Jersey

Overview of Privatization

The first US publicly-procured, long-term concession contract for the operation of a water and sewer system was signed in February 1996 by the Township of North Brunswick (the "Township") and US Water Inc. The Township's Water Treatment Plant had been operated by US Water under contract operations for ten years prior to the concession agreement. This contract was the first application of two recent Jersey state laws: the New Jersey Wastewater Treatment Public-Private Contracting Act and the New Jersey Water Supply Public-Private Contracting Act. Under the terms of the concession contract, US Water operates, maintains, and manages both the water and wastewater systems for 20 years, including the distribution and collection systems, billing and collection, and customer service. In addition, US Water will install new water meters system-wide. The Township still retains ownership of the facilities and its rate-setting ability, but does not participate in any of the day-to-day operations. As a result of the concession, $23 million of Township debt was defeased by US Water, an initial concession payment of $6 million was made to the Township, and royalties of $22.9 million will be paid to the Township over the 20-year life of the contract. The Township estimates the concession contract will result in a total savings of $46 million over the 20-year period.

Community Demographics

Size. The facilities serve the entire Township of North Brunswick having a population of approximately 35,000, and an additional 200 surrounding residences. The number of customers served is about 12,000, consisting of approximately 70% residential, 15% commercial, and 15% industrial.

Location. The Township of North Brunswick is located in Middlesex County, New Jersey.

Economics. The economic base of the region includes manufacturing and some pharmaceutical companies. The area has steady population growth of about 1/2% per year (US Water estimate). A major residential complex of 2,000 units has just been approved to be built in the Township which may create increased growth in the area.

Nature of customer constituency. The facilities serve the Township of North Brunswick, which is a mixture of industrial (20%) and residential customers (80%).

Specifics on bulk/wholesale customers. The Township serves Franklin Township on a wholesale basis for up to 1.0 MGD.

Facility(s) Description (Treatment, Collection, & Disposal)

Size/age. The Water Treatment Plant is only four years old, recently built because the original plant burned. Some of the pumping stations and lines are 50 to 60 years old.

Regulatory history. The Township has experienced only minor violations of New Jersey Water Supply Authority regulations and New Jersey Department of Environmental Protection regulations.

Facility overview. The Water Treatment Plant has a capacity of 10.0 MGD. Average current flows are 4.0 to 5.0 MGD. The Township has a contract with the New Jersey Water Supply Authority to draw 8.0 MGD.

Overview of Procurement/Competition and Implementation Process

Motivating issues. In the fall of 1994, a blue ribbon panel was organized to study the options available to the Township. Ernst & Young conducted a feasibility study and projected the cost of current operations over 20 years and calculated the necessary rate increases. The Township wanted to find a less expensive way to operate the facility, and additionally wanted to relieve itself of billing and collection, customer service, and other responsibilities related to the operation of the facility, but still retain ownership of the facility and its rate-setting ability. The Township also wanted to improve its balance sheet by defeasing some of its outstanding debt.

Community participants / advisory committees. The blue ribbon panel consisted of various members of the Township Council and the mayor.

Privatizer selected and why. US Water was selected primarily for economic reasons. The US Water proposal provided an estimated $46 million cost savings over a 20-year period, and the amount and timing of the additional payments were the most amenable to the Township. All of the bidders were required to defease $23 million of Township debt in their proposals, but the type and timing of other payments were left up to the proposal. US Water proposed to defease the $23 million in debt, to make an up-front concession payment of $6 million to the Township, and to pay royalties of $22.9 million over the 20-year contract period, with varying payments per year.

Regulatory involvement. In New Jersey, the contract must be reviewed by state agencies, and afterwards there is no further review. Water supply service contracts require approval of the Division of Local Government Services in the Department of Community Affairs, the Board of Public Utilities, and the New Jersey Department of Environmental Protection. Wastewater treatment service contracts require approval of the Division of Local Government Services in the Department of Community Affairs and the New Jersey Department of Environmental Protection.

This new legislation in New Jersey is quite innovative in the manner in which it allows payment of concession fees to the municipality. These fees may be paid either up-front, annually, or however the municipality desires. The concession fee must be used to reduce or offset property taxes, service rates, nonrecurring expenses, or capital asset expenditures. The laws permit a wide range of contractual agreements in order to best meet the requirements of the local municipality. However, the utility may be disadvantaged by the comprehensive contract reviews by the above-mentioned regulatory bodies. Furthermore, competitive procurement is required, and asset sales are prohibited.

Time frame. The Township began exploring its options in the fall of 1994 with the organization of the blue ribbon panel and the feasibility study by Ernst & Young. The combined RFQ/RFP was issued in February 1995 and proposals were due May 4, 1995. The procurement process was delayed for a while during the summer while the Township waited for the New Jersey Water Supply Public-Private Contracting Act (which had been passed by the New Jersey Legislature) to be signed by the Governor. The Township also had to wait on both the passing and the signing of the New Jersey Wastewater Treatment Public-Private Contracting Act in order to privatize the sewer collection services, even though the Wastewater Treatment Facility remained the responsibility of the Middlesex County Municipal Utilities Authority (MUA). When both acts were finally passed, the Township issued an amended RFP, providing bidders with the opportunity to re-propose based on the passage of these two new state laws. The Township began negotiations with US Water in September of 1995. Thus, the entire process took one year.

Cost to the community for procurement process. The Township invested approximately $400,000 in the privatization process.

How consensus in the community was achieved. The decision to privatize was not an issue since the Water Treatment facility was already being operated under a contract with US Water. Additionally, Mayor Paul Matacera of the Township wrote in an article, "This contract is a win-win-win public-private partnership for the taxpayers and utility users, the employees and the private firm."

Labor Issues

Outplacement services and displacement process. Township employees are represented by the local chapter of the Communications Workers of America. Since the facilities were already operating under contract operations with US Water, only six employees were affected by the concession agreement. US Water agreed to hire all current employees for at least two years. After two years, employees would either be offered a permanent job with US Water or with the Township.

Public Policy Issues

Issue	*How It Was Addressed*
How was the privatizer held accountable for compliance with environmental regulations, customer service levels, and other relevant requirements?	US Water must comply with state water quality standards and pay fines assessed for violations. There were a number of requirements for repairs and maintenance in the contract, and the Township was given annual inspection rights. An Operations Committee of Township officials and US Water employees would oversee day-to-day facility operations and resolve disputes. For customer service, numerical standards in the contract set maximum response times to customer problems. For example, two days was established as the response time for a customer complaint, and a specified number of hours was established as the response time for a sewer blockage.

How was the community assured that the facility would be expanded to meet future needs?	The Township is responsible for all capital improvements, but can petition US Water to make improvements if they are able to do so at a lesser cost than the Township's engineers. No improvements are an absolute requirement for US Water.

Economics of Case Study for the Community and Privatizer

Short-term economic impacts. The contract spans 20 years, and short-term benefits were not considered in the decision to privatize.

Long-term economic impacts. The fair market value of the 20-year transaction was the primary criterion by which the proposals were judged. The Township estimates total savings of $46 million over the 20-year period.

Rate impacts. The US Water proposal estimated rates for the next 20 years based on their annual fee, with the first year's rates increasing 5.75% over the previous year's rates, and eventually increasing only 3.0% in the latter years of the contract. The cost of operations by US Water was significantly less expensive than Township operations.

Noneconomic Benefits to Community

The system-wide replacement of all water meters was included in the contract as part of US Water's responsibilities.

Lessons Learned

The main questions to ask are "What is the objective of the municipality?" and "Can this objective be achieved through private operations?" In the case of North Brunswick, the Township wanted to be relieved of all utility requirements, to improve its balance sheet, and to have some budget relief. Because of these goals, the Township had to take a longer-term view.

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Cost-Effective Environmental Management Case Study

Contract Operations of the East Bank Sewage Treatment Plant and the West Bank Secondary Treatment Plant

Sewerage and Water Board of New Orleans, LA

Overview of Public-Private Partnership

The Sewerage and Water Board of New Orleans (S&WB), a statutory body of the Louisiana state constitution, owned and operated two wastewater treatment plants which provided secondary treatment of wastewater flows originating in the greater New Orleans area with effluent discharging into the Mississippi River. The S&WB was having difficulty meeting permitted levels for total suspended solids (TSS), operating costs were increasing, and the plant's maintenance program could not keep pace with the repair requirements for the aging East Bank facility. In 1991, the S&WB authorized and funded a $1.7 million capital improvements program (CIP) to rehabilitate major equipment at the East Bank Plant and decided to switch to private operations, maintenance, and management (OM&M). As a result, the S&WB contracted with Professional Services Group (PSG) in 1991 to operate, maintain, and manage the East Bank and West Bank Sewage Treatment Plants for a five-year term. PSG operations have saved the S&WB an average of $1.1 million annually.

Community Demographics

Size. The two plants serve approximately 165,000 customers (a population of 480,000).

Location. The plants serve the greater New Orleans area.

Economy. In addition to the City's year-round tourism industry, the City of New Orleans is a major shipping port, especially for grain and petrochemicals.

Nature of customer constituency. The customer base consists of only retail customers, principally residential and only 1% industrial.

Facility(s) Description (Treatment, Collection, & Disposal)

Size. The East Bank treatment facility, constructed in 1962 and expanded in 1980, is a 122 MGD pure oxygen activated sludge plant. The smaller West Bank secondary treatment facility, constructed in 1973, is a 10 MGD trickling filter plant which is now being expanded such that its capacity will be doubled.

Regulatory history. The S&WB has had difficulty meeting NPDES permit requirements which has resulted in several violations. These violations, prior to privatization, continue to be the subject of litigation between the city and US EPA and the US Department of Justice (DOJ). The facilities have been regulated by the US Environmental Protection Agency (EPA) and the Louisiana Department of Environmental Quality.

Facility overview. The East Bank plant processes more than 90% of the wastewater from the City of New Orleans (City). Having a service area below sea level, high annual rainfall and a large population base places significant demands on the facility. Although the facility is currently rated at 122 MGD with short-term peak treatment capacity of 239 MGD, extended wet weather flows of as high as 250 MGD are not uncommon.

Overview of Procurement/Competition and Implementation Process

Motivating issues. In addition to achieving permit compliance, annual operating savings of $750,000 were projected under privatization due to improved worker productivity. Another major reason for the privatization arrangement was to circumvent Civil Service Commission limitations on employment and job changes. Civil service salary caps did not allow the S&WB to hire the most technically qualified personnel to operate the plant.

Community participants/advisory committees. All of the privatization research was performed in-house. A group headed by the S&WB Sewer & Water Committee Chair, Katherine Moraldo, studied contract operations around the country through a process of gathering and reviewing RFQs, RFPs, and service contracts. Joseph Sullivan, the S&WB Superintendent, led a group in visiting 13 different privatized facilities and interviewing the appropriate staff and city management associated with each facility.

Privatizer selected and why. PSG was selected from a group of three short-listed firms based on cost, operating experience, technical resources, employee training and development programs, safety programs, computerized process controls, and procedures for the transition from public to private operations. This contract represents one of the largest OM&M wastewater operations contracts in the entire United States.

Regulatory involvement. The City is not under the jurisdiction of the Louisiana Department of Environmental Quality since the S&WB is essentially its own state agency. No regulatory review was involved in the privatization process.

Time frame. Beginning in early 1991, the S&WB conducted a nine- to ten-month study of contract operations, which included tours of other privately-operated facilities. PSG assumed OM&M of the facilities on January 10, 1992.

Cost to the community for procurement process. Although not quantified by the City, the process probably cost less than $100,000, since outside advisors were not used.

How consensus in the community was achieved. The main opponent of the privatization process was the City Civil Service System (CCSS), represented by the City Civil Service Commission (CCSC). The CCSC is a rigidly structured group of appointed citizens who make the decisions for the operation of the CCSS in representing City employees. Agreement was achieved through PSG's offer to employ all S&WB employees.

Labor Issues

Nature and extent of labor union involvement. The employees of the S&WB are not represented by a union. One attempt at unionization was made in the past, but failed due to the overwhelming power of the CCSS. Additionally, the CCSS opposed the privatization, until an agreement was reached with the S&WB, PSG, and the CCSC.

Outplacement services and displacement process. PSG offered employment to the plant's 52 employees with better pay and benefits and guaranteed the jobs for two years. Furthermore, the employees were given the choice to remain with the S&WB.

Public Policy Issues

Issue	*How It Was Addressed*
How would the privatizer be held accountable for compliance with environmental regulations, customer service levels, and other relevant requirements?	PSG established regular reporting mechanisms to provide S&WB management with current information on plant operations. Also, the service contract has been structured so that responsibility for all capital improvements and maintenance of items costing greater than $5,000 (or having a service life of over three years) rests with the S&WB. PSG is responsible for routine maintenance and repair. The contractor's operations remain under the scrutiny of the same regulatory bodies as the S&WB's operations. The S&WB retains the NPDES contract with the EPA. Fines resulting from violations which occur under contract operations will be the liability of PSG.

Economics of Case Study for the Community and Privatizer

Short-term economic impacts. Operational savings have been achieved and are expected to grow in future years. PSG operations have saved an average of $1.1 million annually since 1991.

Rate impacts. Rates have not been increased since 1987, remaining flat despite the cost savings achieved by privatization.

Noneconomic Benefits to Community

Quality of service. PSG established a preventive maintenance program and a comprehensive odor control plan and conducted a Comprehensive Maintenance Evaluation (CME) of the plants upon assuming operational control. The CME uses advanced analytical techniques and predictive maintenance methods to anticipate equipment problems.

Compliance history. PSG directed the complete rehabilitation of a 70 tpd cryogenic plant which had been inoperable for years and also restored inoperable 40 tpd and 20 tpd incinerators, whose failure had resulted in numerous compliance violations. In addition, plant discharge quality has been improved. Increased incinerator capacity has cut solids inventory throughout the facility to approximately 200 tons, and fecal coliform in the effluent has been reduced to an average of 12 colonies per 100 ml/d because of the rehabilitation of the chlorination system.

Employee relations. Private operations have provided improved wages and productivity incentives for employees, as well as extensive employee training programs.

Drawbacks

The S&WB believes it was a mistake to sign a five-year contract, renewable for one-year periods. It is now the fifth year of the contract, and the S&WB would have liked to be renewing the contract with PSG for another five years, instead of only one year. The S&WB believes that making the contractor a longer-term provider gives the contractor more financial exposure in the operations of the facility, and thus the municipality can expect greater efforts and efficiencies by the provider.

Lessons Learned

The key to a successful privatization is having a well-defined contract with a reputable firm.

The contracting government should make sure that the term "maintenance" is well-defined in the contract, as well as who will pay for each type of maintenance. This will prevent any "arm-wrestling matches" during the contract period. Although the S&WB and PSG have excellent relations, disagreement may still occur over who should bear certain costs.

Community/Privatizer Contacts for Additional Information

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Cost-Effective Environmental Management Case Study

Contract Operations of the North Canadian, Chisholm Creek, and Deer Creek Wastewater Treatment Plants; the Witcher Pumping Complex; and Related Sludge Disposal Services

Oklahoma City Water Utilities Trust

Overview of Public-Private Partnership

In 1988, the Oklahoma City Water Utilities Trust (OCWUT), a business entity created by state law, contracted out the operations, maintenance, and management of three wastewater treatment facilities, a pumping station, and all sludge disposal services. Professional Services Group (PSG) was awarded the contract to operate the North Canadian, Chisholm Creek, and Deer Creek Treatment Plants, the Witcher Pumping Complex, and the related sludge disposal services. Prior to entering into the agreement with PSG, operations and maintenance duties at the North Canadian and Deer Creek plants had been performed by two separate companies, while operations at the Chisholm Creek plant had been carried out by City employees. Sludge disposal for each facility had been performed by an additional company under three separate contracts. This independent structure of operations, maintenance, and sludge removal activities had created an unnecessary and expensive duplication of operations, equipment, and personnel. The incorporation of all these facilities into contract operations by PSG has created savings of approximately 11% annually for OCWUT.

Community Demographics

Size and location. The three wastewater treatment facilities receive predominantly domestic waste from approximately 600,000 residents, as well as process waste from light industries in the service area. The plants serve an approximately 530 square mile area in and around Oklahoma City.

Nature of customer constituency. The City has special "wholesale" contracts with surrounding municipalities, the local Air Force base, and General Motors in addition to its retail, residential, commercial, institutional, and industrial customers.

Facility(s) Description (Treatment, Collection, & Disposal)

Size. The North Canadian plant has an average design capacity of 80 MGD, and the Deer Creek and Chisholm Creek plants have average design capacities of 10 MGD and 5 MGD, respectively. Collectively, the three plants generate an annual average of 23,500 tons of sludge.

Facility overview. The North Canadian plant processes consist of grit/screening removal followed by primary clarification, activated sludge treatment, secondary clarification, chlorine contact, and various odor control devices such as chemical scrubbers and a hydrogen peroxide injection system. The Witcher Pumping Complex consists of two large lift stations and three aeration wastewater storage lagoons. The Deer Creek plant is a rotating biological contractor plant for secondary treatment followed by nitrification and chlorination. Finally, the Chisholm Creek plant has primary and secondary treatment using the activated sludge process, followed by advanced treatment of nitrification, phosphorous removal, and filtration with chlorination prior to discharge to the receiving system.

Overview of Procurement/Competition and Implementation Process

Motivating issues. The City considered privatization in an effort to lower costs to taxpayers. In 1987, the operating cost to the City for the treatment of 80 MGD was approximately $12 million. Comparisons with other wastewater facilities revealed that Oklahoma City was paying about twice what other municipalities were paying for wastewater treatment on a per unit basis.

Utility staff and officials. The Treatment Division of the Water and Wastewater Utilities Department of Oklahoma City conducted the entire procurement process. No outside engineering or financial consultant was hired by the City.

Privatizer selected and why. The RFP directed prospective firms to identify operational changes and/or capital improvements to ensure maximum efficiency and to lower costs. This provision opened the door to innovative techniques in sludge processing and disposal. PSG was chosen for having the lowest cost proposal as a result of the capital improvements and operational changes proposed in their proposal.

This contract was especially progressive for its time, since most contract operations agreements for wastewater treatment plants were for operation of the plant "as is." This agreement permits operational changes and capital improvements to ensure the most efficient and cost-effective operation of the facilities.

Regulatory involvement. No regulatory approval was needed for the contract between PSG and OCWUT.

Time frame. In 1987, the City put sludge management, disposal services and operations of all the facilities up for competitive proposal. The entire process took approximately one year, and the contract was signed in 1988.

Cost to the community for procurement process. Although not quantified by the City, the process probably cost less than $100,000.

How consensus in the community was achieved. All but one of the facilities were already privately operated, so gaining consensus was not a major issue. The assistant city manager had an engineering background and could easily explain the privatization process and projected results to City Council.

Labor Issues

Out placement services and displacement process. The employment of all existing employees was a condition of the RFP. Although the employees were members of the American Federation of State, City, and Municipal Employees (AFSCME), there was no union involvement in the privatization process. At the start of contract operations, PSG offered employment with equal salary and benefits to all City plant employees. During the first year of the contract, the firm conducted intensive hands-on and classroom training, and a continuous training program was established. In addition to in-house training, many employees utilized the Department of Environmental Science at nearby Rose State College to help prepare them for certification, with tuition fully reimbursed by the company. Employees who did not choose to work for PSG could also remain employed with the City.

Public Policy Issues

Issue	*How It Was Addressed*
How would the privatizer be held accountable for compliance with environmental regulations, customer service levels, and other relevant requirements?	Under the agreement, the City still owns the facilities, but PSG has assumed responsibility for operation of the three plants, their effluent quality, and any fines that the municipality may be required to pay for compliance violations. The Treatment Division of the City's Water and Wastewater Utilities Department employs three people whose jobs are to oversee the private operations by looking after the plant and making routine inspections. The operations are also subject to regulations and checks by the EPA, the State Department of Environmental Health, and the City-County Health Department.

Economics of Case Study for the Community and Privatizer

Short-term economic impacts. In the first year of the contract, the City saved about $4.5 million. The City has been saving about 11% per year over original budget projections as a result of the capital improvements and operational changes from privatization. In the initial year of operations, there were certain scope changes because of the addition of new technologies that led to additional costs. After three years, the contract was renewed for an additional five years, and will be eligible for renewal next year. PSG's annual fee is currently $10.3 million, which remains lower than the 1987 cost of OCWUT operations.

Rate impacts. Wastewater rates have not been increased since October 1983. From 1989 to 1993, a 4% annual decrease in wastewater rates occurred as a result of the savings achieved under private operations. Since the last decrease, the City has used the cost savings from privatization to make improvements within the system instead of lowering rates. The City is contemplating rate increases of 3% per year for three years beginning in October 1996.

Noneconomic Benefits to Community

Technology changes. The post-dewatered lime stabilization process, approved by the state in 1988, has greatly reduced energy consumption for sludge processing and has also dropped polymer conditioning aids by 50%.

The largest cost reduction by far has been the decrease in transportation costs. Previously, 6,500-gallon tankers carried 60 to 65 loads of liquid sludge per day, seven days a week, from the North Canadian plant to the application sites. Now that the sludge has a much higher solids content, truckloads have decreased to 18 to 20 per day, five days a week. Under the land application program, cake sludge is transported from the plant and applied to agricultural farmlands and other lands for recycling of nutrients.

At the Witcher Pumping Complex, PSG has implemented extensive operational and mechanical improvements, including the installation of a computer-based telemetry system, an upgrade of the control system, and the implementation of a more efficient staffing plan.

Lessons Learned

The City did not anticipate how large a role it would need to play in supervising the contract operations. The City now has three employees dedicated to the oversight of the facilities.

Community/Privatizer Contacts for Additional Information

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Cost-Effective Environmental Management Case Study

Contract Operations of the Biosolids Recycling Center

Philadelphia, Pennsylvania

Overview of Public-Private Partnership

The Philadelphia Water Department (PWD) owns and operates one of the largest centralized biosolids processing facilities in the United States, the Biosolids Recycling Center (BRC). Specifically, BRC is a division of the Philadelphia Water Department and reports to the same management. In the late 1980's, the BRC was experiencing high operations costs, low productivity, community distrust, extremely high overtime expenditures, labor unrest, and improper equipment. Most importantly, a consent decree was imposed on the BRC by the Pennsylvania Department of Environmental Resources for removal of stockpiled products from unpermitted areas. Also, the BRC was the target of unfavorable union action and media attention during protracted municipal union negotiations in the summer of 1992. After a new city administration settled the union contract, the administration set a goal for itself to reduce operating costs at the BRC by $5 million (approximately one-fifth of operating costs at that time), and retained the engineering firm of Camp, Dresser & McKee (CDM) to evaluate the BRC and estimate the cost of operations under private management. Contract operations was generally presumed the only viable option available to the city to accomplish the cost savings goal set by the administration. While no specific assurance was given by the administration, the managers of the BRC believed that a challenge had been presented to them to accomplish a successful turn-around, concurrent with the CDM study, which might thereby dissuade officials from proceeding with contract operations.

Community Demographics

Size. The BRC provides the dewatering and composting processes for two regional wastewater plants, the PWD's Northeast Water Pollution Control Plant and the Southwest Pollution Control Plant, which serve approximately 487,000 accounts (2.3 million people). The PWD formerly had an

agreement with the Camden County Municipal Utilities Authority (CCMUA) in which its BRC provided sludge treatment services for this county's wastewater facility; however, the contract expired in June 1995 and has not been renewed.

Location. The PWD provides sludge disposal services through the BRC to the City of Philadelphia and ten counties, townships, and/or authorities in the surrounding area, including: the Township of Abington, Bensalem Township Authority, Bucks County Water and Sewer Authority, the Township of Cheltenham, the Delaware County Regional Water Quality Control Authority, the Township of Lower Merion, the Township of Lower Moreland and Lower Moreland Township Authority, Lower Southampton Municipal Authority, the Township of Springfield in Montgomery County, and the Upper Darby Township.

Nature of customer constituency. The BRC processes liquid sludge from the two regional wastewater treatment facilities and distributes the processed biosolids product to contractors for ultimate disposal. Under the Total Quality Management (TQM) philosophy adopted by the BRC management, both the regional wastewater treatment plants and the contractors receiving the biosolids product are considered customers of the BRC.

Facility(s) Description (Treatment, Collection, & Disposal)

Size. The BRC consists of a centralized biosolids dewatering station and a 72 acre biosolids composting plant. At the time the RFQ was issued, October 1993, the BRC handled approximately 15.5 million gallons per week of digested and thickened sludge.

Regulatory history. A consent decree was imposed on the PWD by the Pennsylvania Department of Environmental Resources for the removal of stockpiled products from unpermitted areas.

Specific type and extent of privatization. The City issued an RFQ in October 1993 to begin the privatization process. Meanwhile, the managers of the BRC implemented vigorous changes at the facility, focusing on addressing the financial challenge of meeting self-imposed "expense goals". The PWD management succeeded in meeting the challenge, and the City halted the privatization process.

Overview of Procurement/Competition and Implementation Process

Motivating issues. In the late 1980's, the BRC faced numerous problems, including: high operations costs, low productivity, community distrust, extremely high overtime expenditures, labor unrest, improper equipment, and most importantly, a consent decree imposed by the Pennsylvania

Department of Environmental Resources for the removal of stockpiled products from unpermitted areas. In addition, the BRC was the target of unfavorable union action and media attention during protracted municipal union negotiations in the summer of 1992. The combination of these factors made the BRC a prime candidate for privatization.

Utility advisors. The City retained Camp, Dresser & McKee (CDM) to evaluate the facilities and estimate the cost to operate the plants under private management. The study estimated that contract operations of the BRC would yield annual savings of $6 million to $8 million over current city operations.

Labor Issues

Nature and extent of labor union involvement. The union, District Council 33 of the American Federation of State, County, and Municipal Employees (AFSCME), negotiated with the PWD management to ensure that no layoffs would occur. In turn, the PWD management worked closely with AFSCME to develop the best strategy for moving employees within the PWD. Although some employees may have been placed in lesser positions, no one was unemployed as a result of the changes implemented by the PWD management.

Economics of Case Study for the Community

Table 1 — Biosolids Management Unit Budget and Expenditures, FY 1993 to FY 1995

Budget Categories	1993 Budget	1993 Actual	1994 Budget	1994 Actual	1995 Budget	1995 Actual
Personnel Services	$ 7,368,517	$ 7,909,975	$ 7,648,000	$ 5,929,115	$ 5,000,000	$ 4,967,081
Purchase of Services	17,068,000	14,564,581	10,396,000	8,170,801	6,950,000	6,560,069
Materials and Supplies	6,025,000	4,279,906	5,693,000	4,171,463	3,500,000	3,320,188
Equipment	100,000	123,486	190,000	141,535	230,000	38,690
TOTAL	$ 30,561,517	$ 26,877,948	$ 23,927,000	$ 18,412,914	$ 15,680,000	$14,886,028

Source: Table 4 of "Privatization—A Challenge to Change in the 1990's," Philadelphia Water Department.

Rate impacts. The BRC rates are set by the PWD for the entire department and are fixed for long periods of time. Rates have not been reduced as a result of cost savings; however, they are not expected to be increased until after the turn of the century.

Noneconomic Benefits to Community

Quality of service. To basic inefficiencies, the BRC management implemented the use of Total Quality Management (TQM) principles which incorporate four key components, the first of which is "customer orientation". Employees at the BRC became mindful that their customers, both the wastewater facilities supplying liquid sludge and the contractors receiving processed biosolids products, mattered. The employees focused on improving operations which affected their customers.

Technology changes. Management modernized the dewatering equipment by replacing eddy current backdrives and installing automatic torque control which removed the need for "hands-on" operation and improved the consistency of equipment performance. Vehicular equipment was reassigned to upgrade the BRC's capacity for materials handling, and production of screened compost was reduced from two shifts to one shift of operation as a result of a better coordinated screening system.

Lessons Learned

The lessons listed below are taken from the article, "Privatization—A Challenge to Change in the 1990's" written by the PWD for a *Water Environment Federation* publication.

- Municipal operations, even those with a tradition of union activism and strong work rules, present an opportunity for positive change.
- Sound data and clear operational objectives can set the stage for positive change in municipal operations.
- Very large financial benefits can be realized in changing a municipal operation, and potential savings can be of a size meeting or exceeding projected financial benefits of privatization.
- The Total Quality Management technique is one tool for municipal managers (proven at Philadelphia's BRC) which can help accomplish the same goals of decreasing cost and increased efficiency.

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Cost-Effective Environmental Management Case Study

Contract Operations of West New York Municipal Utility Authority Water Pollution Control Facility

West New York, NJ

Overview of Public-Private Partnership

In the fall of 1994, the West New York Municipal Utility Authority (MUA) issued an RFQ for the purchase or lease of its 10 MGD wastewater treatment facility. In early 1995, the MUA issued an RFP, and three proposals from private contractors were received by June of 1995. Concurrent with the receipt of the proposals, a new mayor and city administration were elected, creating the need to familiarize the new administration with privatization.

In addition to the political changes occurring at the time, a nearby wastewater authority, the Tri-Cities Authority, expressed an interest in buying the assets of the MUA soon after the private proposals had been received. This interest created a new dynamic in MUA's decision to privatize, since the issues involved in a sale to another public entity differ from those involved in a sale to a private contractor. This opportunity has created new possibilities for the MUA which had not been contemplated earlier and has delayed the procurement process for over a year.

The Town of West New York (Town) is still in the process of deciding the preliminary issue of whether or not to sell to a public authority or to a private contractor. The decision of which privatizer to choose will obviously have to come after this first decision is made. The Town wants to put the privatization process officially on hold, so that if the decision is made to sell to the private sector, no backtracking will be necessary. As of July 1996, US Water, Inc. and AmericanAnglian Environmental Technologies, Inc. are the only two contractors that remain in the competition.

Community Demographics

Size. The MUA serves a population of 60,000 and has 4,900 customer accounts.

Location. West New York, NJ is located only a few miles from Bergen County.

Economy. The area's economy is composed of service-oriented companies.

Nature of customer constituency. The MUA serves primarily retail customers of West New York, but also serves portions of Union City and Weehawken as wholesale customers.

Facility(s) Description (Treatment, Collection, & Disposal)

Size. The MUA operates a 10 MGD wastewater treatment facility.

Specific type and extent of privatization. The MUA received three proposals from private contractors in June 1995 to purchase the facility (full privatization), and as of July 1996, these proposals were still being considered. The potential still exists for the procurement process to be formally put on hold so that the MUA can consider another option, specifically the possibility of merging with or selling its assets to another public authority.

If the MUA decides on full privatization, it will retain some control over its facility by way of a service agreement with the privatizer. If the MUA decides to sell to the Tri-Cities Authority, however, the MUA will not be responsible for any aspects of the wastewater treatment facility, nor will it have any control over its operations or rates.

Overview of Procurement/Competition and Implementation Process

Motivating issues. The MUA is having trouble managing the debt service generated from capital investment.

Community participants / advisory committees. The City Council and the MUA Board are involved in the privatization process.

Utility advisors. CME Associates of Parlon, New Jersey are the consulting engineers; Natwest is the financial advisor; and DeCotiss, Fitzpatrick & Gluck are legal counsel for the MUA.

Privatizer selected and why. No privatizer has yet been selected.

Time frame. The MUA has been considering privatization for about two years as of June 1996.

Labor Issues

Nature and extent of labor union involvement. The MUA Director stated that employee issues have not hindered the privatization process.

Lessons Learned

Economic and political factors which may affect the privatization process are really very case specific. The election of a new mayor and the purchase offer from a public authority have hindered the privatization process in West New York.

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Cost-Effective Environmental Management Case Study

Full Privatization of the Wilmington Wastewater Treatment Plant

Wilmington Delaware

Overview of Public-Private Partnership

In the fall of 1994, the Department of Public Works (DPW) for the City of Wilmington (City) began investigating the economic benefits of privatizing the operation of the Wilmington Wastewater Treatment Plant (WWTP). Two privatization options were evaluated initially: (1) leasing the WWTP to a private operator and (2) the sale of the WWTP assets to a private owner/operator with a 20-year operations contract. Under the guidelines set by Presidential Executive Orders 12803 and 12893, the City was seeking to receive a substantial up-front payment by the privatizer to be amortized over the life of a 20-year operations contract. After completing an elaborate procurement process to select a preferred privatizer, the project was delayed due to concerns raised by New Castle County (County). The County generates 70% of the flows to the WWTP, and wanted to ensure that the interests of its customers/residents were not being neglected to the benefit of the City. It further wanted to share in the financial benefits offered by the sale of assets.

As a result, a number of alternative privatization scenarios were evaluated in an effort to reach an agreement acceptable to all parties. These included variations of both a 20-year long-term operation and maintenance contract and a five-year contract. Overall, the economic analysis indicated that an operations and maintenance contract agreement offered the greatest cost savings since this alternative would not involve repayment of the front-end purchase costs. The County wanted to purchase the plant in order to have increased control over plant operations and input into future decisions about plant expansions. As another alternative, the County offered to become a co-owner of the facility. As of this point, the City has chosen to change the privatization approach to a 4- to 20-year operations and maintenance contract with a service agreement between the City and the privatizer. However, no final agreement had been reached, and negotiations were still underway to determine the type of privatization approach that best meets the needs of all parties.

Community Demographics

Size. The WWTP serves an approximate population of 460,000 in the City of Wilmington, most of New Castle County, and a small part of Pennsylvania. The City represents approximately 16% of the total population of the County and generates approximately 30% of total flows to the plant. Almost all of the growth is occurring in the County.

Location. The plant is located within the City limits of Wilmington, Delaware adjacent to the Delaware River.

Economics. The economic base for Wilmington and the surrounding area includes a large professional group and a large industrial presence, particularly the petrochemical industry, including DuPont.

Nature of customer constituency. In the City, the facility serves residential, commercial, and industrial retail customers. It also provides service on a wholesale basis to the County, which in turn provides retail service to a mixture of residential, commercial, and industrial customers. The City also provides wholesale service to the City of Newark and South Delaware County.

Specifics on bulk/wholesale customers. The relationship between the City and the County for wastewater treatment services (the County being a wholesale customer of the City) is governed by an interjurisdictional service agreement. The agreement sets the methodology used to allocate costs to be recovered from the County for wastewater treatment. The County sets its retail rates to recover cost for wastewater treatment plus cost for operation and maintenance of its collection system.

Facility(s) Description (Treatment, Collection, & Disposal)

Size/age. The plant has a rated capacity to treat 90 MGD and is operating at capacity. During wet weather months, the WWTP often exceeds its permitted average flow capacity, since stormwater is treated at the plant along with domestic and industrial wastewater. The City is in the final stage of completing a $20 million expansion in secondary treatment capacity, and has already implemented improvements of $18 million in primary treatment and digestion capacity. As a result, the City will be seeking an increase in its Delaware River waste load allocation and an increase in the rated flow capacity from the Delaware Department of Natural Resources and Environmental Control (DNREC).

Regulatory history. The WWTP has maintained general compliance with DNREC regulations, with the exception of some problems related to high flows to the plant during wet periods.

Facility overview. The facility provides tertiary treatment of wastewater in order to meet stringent requirements for water quality before treated water can be released into the Delaware River.

Specific type and extent of privatization. The full privatization was to include purchase of most of the assets at the WWTP with the exception of the specific assets recently added to the facility and financed with State Revolving Fund (SRF) Loans. Assets related to the collection system, including sewer pump stations, were not included as part of the assets to be purchased. The price to be paid to the City for the WWTP assets was fixed in the RFP, based upon the Net Book Value of the assets specifically identified (approximately $52 million). After a re-evaluation of listed assets, this price was subsequently adjusted downward to $41.9 million. Contract operations of the facility would include management, operation and maintenance for all of the assets at the WWTP, including SRF funded assets, plus the main sewer pump stations located outside the plant. The only exceptions were the sludge dewatering and processing facilities located at the WWTP, which were already operated by an existing contract operator (Wheelabrator EOS), and the solids removal operations, which were contracted out to a second contract operator (VFL). It is anticipated that both of these operations will be consolidated under the operation of the new privatizer once the existing contracts expire.

Overview of Procurement/Competition and Implementation Process

Motivating issues. The City expressed three main objectives in seeking to privatize the WWTP: (1) controlling operating costs, (2) ensuring short- and long-term cost and rate stability, and (3) generating cash to the City to meet other financial needs. The full privatization option, including the sale of the WWTP assets with a 20-year operations contract, provided the most effective method of achieving these goals. Further objectives included achieving acceptable rate impacts to all customers, preserving the City's capital investment to assure long-term reliability and performance of the WWTP, and gaining assistance from the privatizer in meeting future capital expenditure objectives.

Community participants/advisory committees. A privatization review committee was formed to manage the overall procurement process; including development of RFP documents, review and evaluation of proposals, negotiations with the preferred vendor, and implementation of an appropriate service agreement. The review committee was made up of City staff from several departments, including legal, personnel, finance, and public works (wastewater treatment division), and also included a representative from the mayor's office. There was no representation from New Castle County since the City owned the WWTP assets, and the expectation was that any privatization agreement would be entered into between the City and the privatizer only. Services provided to the County would continue to be defined and regulated by an interjurisdictional service agreement between the City and the County.

Utility staff and officials. Since the City had announced its clear intention to privatize the facility, including the sale of assets to the most qualified firm, there was little concern about possible conflicts of interest resulting from DPW staff participation on the procurement and evaluation process. However, with the exception of the Water Division Director, operations staff were not involved in the evaluation and ranking of technical proposals from privatizers.

Utility advisors. The City hired Raftelis Environmental Consulting Group (RECG) to provide assistance with the initial feasibility analysis of privatization options and with the entire procurement process, from the development of the RFP document through contract negotiations. Other advisors included P.G. Corbin Co. who provided financial advice in assessing the impacts of the transaction on the financial posture of the City; Saul Ewing, bond counsel, who investigated potential changes in the tax status of bonds; and the firm of Richards, Layton & Singer who participated in negotiating many of the legal aspects of various privatization scenarios.

Privatizer selected and why. Wheelabrator EOS was the preferred vendor based on an evaluation of firm qualifications and technical proposals. The review committee and utility advisors conducted the evaluation based upon an evaluation matrix that included the following general criteria:

- corporate profile;
- corporate experience and expertise;
- regulatory experience;
- key management and operational personnel;
- financial strength;
- employee considerations;
- references and reputation;
- utilization of Disadvantaged Business Enterprises and EEO compliance; and
- completeness and responsiveness of the proposal.

Cost proposals were submitted separately from the technical proposals, as required by City procurement policies, and were not used in the evaluation and ranking of submittals. Each proposer was scored and ranked solely on the basis of its technical proposal. The cost proposals were to be used for developing a cost basis for negotiating a Service Contract and Service Fee with the preferred vendor. Ultimately, the most qualified privatizer was selected at the least cost as a result of the negotiations. The procurement process was challenged in court, but the City's process prevailed.

Regulatory involvement. As owner of the treatment plant assets, the privatizer would be expected to maintain all necessary local, state, regional, and federal permits. However, since the privatizer would not have direct interface with customers, it was not anticipated that the transfer of ownership, or the operation and maintenance of the plant, would fall under the jurisdiction of, or be regulated

by, the Delaware Public Service Commission. However, if full privatization included the purchase of WWTP assets and the subsequent repayment of federal grants, it was anticipated that approvals would be required from DNREC, Region III of the U.S. Environmental Protection Agency (EPA), the US EPA, and the federal Office of Management and Budget (OMB). The need for approvals at the regional and federal level under a long-term lease privatization scenario is still being investigated.

Time frame. The feasibility study to determine the economic benefits of privatization and the preferred privatization option began in the fall of 1994. The decision to move ahead with privatization came in January 1995, and work began on the RFP document in March 1995. The RFP was issued in early May, with technical proposals due by the end of June, and cost proposals due by July 21, 1995. The proposal evaluation process, including requests for clarification and interviews, took approximately six weeks, with the notice of rankings issued at the end of August. Contract negotiations with the preferred privatizer began shortly thereafter and were to have been completed by the end of 1995, with a scheduled project start date of January 1, 1996. However, negotiations are still underway between the City, County, and Wheelabrator EOS to develop an acceptable privatization scenario that meets the objectives of all parties, which will likely be a service contract with a term of 4 to 20 years.

Cost to the community for procurement process. The cost for project feasibility studies, procurement services, negotiation, and implementation (including consultant and legal fees) is in the range of $300,000 to $400,000.

How consensus in the community was achieved. Consensus within the total service area, including New Castle County, was not cultivated from the outset. As a result, the County did not approve of the project and voiced significant concerns that the City was going to receive a substantial financial windfall that County customers would ultimately pay for in the form of higher rates. Even after it was demonstrated that privatization would result in significant long-term rate savings for all customers, the County believed that it had an "equity position" in the assets and should share in the benefits derived from privatization. Disagreement over this central issue is the primary reason that the full privatization initiative failed.

Labor Issues

Nature and extent of labor union involvement. At the time the RFP was issued, 24 of 41 plant employees were members of the American Federation of State, County, and Municipal Employees (AFSCME) Local 320, and 15 were members of AFSCME Local 1102. Privatizers were required per the RFP to offer employment to all existing employees who passed a basic physical and drug screening, with comparable salary and benefits as offered by the existing union contract. Privatizers

were also required to honor the terms of the existing collective bargaining agreements with the unions. Union approval and cooperation was sought reasonably early in the procurement process, as proposals were being evaluated. Because of the RFP requirements previously listed, employee and labor union concerns did not become a major issue in the process.

Outplacement services and displacement process. Privatizers were required not to terminate employees except for cause for a minimum period of two years. Reductions in staffing levels to achieve more efficient operations and costs savings were anticipated to be obtained through normal attrition. The use of a 20-year service agreement under full privatization provided a sufficiently long time frame to allow for staff reductions through attrition, as compared to a five-year service agreement.

Economics of Case Study for the Community and Privatizer

Since full privatization did not occur, and contract operations is still being negotiated, it is not possible to assess the economic benefits gained through privatization. However, based upon the economic feasibility study conducted in the fall of 1994, the expectation of full privatization was neutral short-term economic impacts and positive long-term economic benefits, both to the City in terms of cost of operation and availability of funds to meet capital growth needs, and to ratepayers. Rate benefits, in terms of lower expected rates from year five through 20 over the 20-year time frame, would be reflected in both inside-City retail rates and wholesale rates charged to the County. These benefits are substantial given that the City was to receive a substantial cash infusion from the sale of the assets that would be recovered by the privatizer over the 20-year operations contract. Cost savings from improved operating efficiencies under private management were expected to more than offset the cost of amortizing the purchase price.

Once the County demonstrated that it intended to block full privatization unless it was allowed to participate in the economic benefits derived from the sale of assets, several additional feasibility analyses were conducted. These analyses evaluated alternative scenarios for accomplishing the objectives of the City. One alternative was to have the privatizer make a front-end payment to the City, in the form of a loan or contribution, that would be recovered through the service fee. Several front-end payment amounts were considered, ranging from $4 million to $28 million. A significant portion of this payment was assumed to be used to retire existing debt, which left insufficient funds available for other financial needs of the City unless this payment was at the high end of the range. The analysis indicated that the economic impacts, particularly rate impacts, were less favorable with a shorter five-year operations and maintenance contract. An analysis assuming four consecutive five-year contracts demonstrated more favorable economics, but was unacceptable to the privatizer because of the risk that the renewal options were not guaranteed. In addition, the County was

unwilling to participate since it would be paying 70 % of the cost of the front-end payment without receiving any benefits. As a result, the City agreed that in the event that a front-end payment was received, all costs associated with repaying this amount would be recovered exclusively from the City's retail rates and would not be passed through to County customers.

Another alternative was for the County to purchase part of the WWTP assets to become joint owner with the City. This would provide the cash infusion needed by the City to retire debt and meet other financial needs. However, this alternative raised concerns about the political impact of co-ownership and the ability of the City to control future service delivery and capital expenditure for plant expansions. In addition, the City currently bills the County for its proportional share of depreciation expense, which effectively turns a non-cash expense into a cash benefit for the City. This arrangement would have had to be modified if the County became a co-owner.

A third alternative was to have the privatizer lease the WWTP assets. The lease was structured to include payments in lieu of taxes as an alternative cash inflow for the City. Under the original full privatization scenario, the City would have received annual property taxes from the privatizer to meet other financial needs. By structuring a lease arrangement that included annual payments in lieu of taxes, the City could generate cash available for other needs. The extra cost would be offset by savings in operating costs to keep rate impacts acceptable. However, the County again refused to participate since they would receive no benefit and would be paying 70% of the cost through their rates. In general, the County's position was that any cost related to up-front payments, or any other payments to the City that did not relate directly to operation of the WWTP, should be recovered exclusively through the rates charged to the City's retail customers, which would result in substantially greater rate impacts on retail customers in the City.

Noneconomic Benefits to Community

Quality of service. The private contractor was expected to provide equal or improved performance over existing operations in terms of treatment processes, effluent quality, maintenance and preservation of equipment and capital resources, and other parameters for measuring operational quality and efficiency.

Compliance history. The privatizer was expected to assist with efforts to control CSO problems, including recommendations for improvements in process controls or changes to plant operations and/or capital improvements that may be required.

Technology changes. With a 20-year service agreement, access to more advanced and efficient treatment technology would be enhanced, both because the privatizer is expected to have better access to the latest technology, and because cost savings achieved through technological enhancements were to be shared by the privatizer and the City.

Drawbacks

Increase in cost of capital. Access to capital from the privatizer, as well as access to tax-exempt Private Activity Bonds, was expected to keep the cost of capital from increasing significantly as compared to revenue bonds and SRF financing.

Reimbursement of federal grant and/or state SRF funds. Although full privatization would involve additional regulatory approvals because of the need to repay federal grants, this process was not expected to add significant cost or time to the process. However, experience with this process was a criterion used to evaluate proposals, and the privatizer was required to assume a large share of the responsibility for moving this process forward. SRF-funded assets were not included in the assets to be sold, so reimbursement of these funds was not an issue.

Perceived loss of control. The guidelines established in the draft Service Agreement (included as part of the RFP document), including performance measures and reporting requirements, coupled with a performance bond, were sufficient to alleviate most concerns over loss of control.

Negative aspects of long-term contracts. The longer-term contract included as part of the full privatization option was viewed as a positive aspect, since it provided an opportunity for the privatizer to recover its initial investment to purchase the WWTP assets over a longer time frame. As a result, short-term rate impacts were acceptable, and it allowed sufficient time to implement cost-saving operational changes, in terms of technology and labor, to keep long-term operating costs and rate impacts at an acceptable level.

Lessons Learned

The failure of the full privatization initiative, in spite of the expected short- and long-term benefits to all ratepayers, was precipitated by the failure to achieve consensus early in the process among all affected parties or stakeholders. Even though the County did not share in the ownership of the WWTP assets, its position as the largest customer, producing approximately 70 % of flows to the WWTP, provided sufficient leverage to block the privatization initiative. The County argued that

they should also participate in the economic benefits derived from the sale of the assets since County ratepayers had contributed significantly toward the capital costs associated with those assets. By withholding its cooperation and refusing to enter into a new interjurisdictional agreement that would provide a long-term commitment to provide the flows needed to keep the plant operating at or near capacity, the deal was effectively blocked. Sharing the cash payment with the County did not work for the City because after reimbursing federal grants, the remaining funds would be insufficient to meet other financial needs of the City, which was the main justification for, and benefit of, selling the WWTP assets. As a result, the City has decided to retain ownership of the assets and possibly forgo the benefits of an up-front cast payment, in favor of a standard contract operations approach to reduce operating costs. The lesson to be learned from this process is that all major users or stakeholders should be included in the privatization process from the very beginning.

Other lessons to be learned include:

- Care should be taken to exclude from the evaluation and selection process any existing personnel whose position or job would be significantly or directly impacted by privatization. In particular, any personnel directly involved in the operation of the facilities to be privatized should be excluded from the evaluation process.
- It is essential to review, understand, and seek clarifications where necessary, on any procurement laws, regulations, or guidelines that may affect the procurement, evaluation, selection, or negotiation process. Rigorous compliance with all relevant rules and guidelines is essential to avoid possible legal challenges to the procurement process.
- It is important to keep relevant state environmental agencies informed throughout the privatization process. Depending on the specific type of privatization, more extensive coordination and involvement may be required.

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CHAPTER III: RELATED INFORMATION/SOURCES/REFERENCES

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